VOLUME 46 JANUARY 1953 NUMBER 1

Southern Medical Journal

Journal of the Southern Medical Association

Copyright, Southern Medical Association, 1953. Published monthly by the Southern Medical Association, Empire Building, Birmingham 3, Alabama. Annual subscription $10.00. Entered as Second-Class Matter at the Post Office at Birmingham, Alabama, under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized December 20, 1921.

Southern Medical Association, Forty-Seventh Annual Meeting, Atlanta, Georgia, October 26-29, 1953

TABLE OF CONTENTS

Picture of Dr. Alphonse McMahon, President-Elect, Southern Medical Association ..... Insert

Pulmonary Insufficiency in the Newborn. Helen Morton, G. R. Hennigar and Lee E. Sutton, Jr., Richmond, Virginia ... 1

Discussed by Samuel F. Ravenel, Greensboro, North Carolina.

Recent Developments and Future Trends in the Field of Orthopedic Appliances. Rufus H. Alldredge, New Orleans, Louisiana 7

Bronchogenic Carcinoma. J. D. Trader and E. T. Odom, Tuskegee, Alabama . 12

Better Tonsillectomies and Adenoidectomies: Fewer Postoperative Hemorrhages. Edley H. Jones, Vicksburg, Mississippi 15

Milkers' Nodules. Edward P. Cawley, Charles W. Whitmore and Clayton E. Wheeler, Charlottesville, Virginia..... 21

Prophylaxis of Peptic Ulcer. Milford O. Rouse, Dallas, Texas..... 23

An Adequate Operation for Carcinoma of the Stomach. Franklin E. Walton, St. Louis, Missouri..... 28

The Diagnosis and Treatment of the Infertile Couple. Fred A. Simmons, Boston, Massachusetts..... 33

Uterine Curettage, Its Development and Use. Curtis J. Lund, Rochester, New York 39

Medicine in the Small Town. Paul Williamson, Memphis, Tennessee..... 42

Developments in Public Health in the Southern United States. W. L. Treuting, New Orleans, Louisiana 44

The Medical Profession and the Public. Louis H. Bauer, New York, New York.. 47

A Fable. Fount Richardson, Fayetteville, Arkansas 50

Suggestions in Coordinating the Study of the Psyche and the Soma. R. Eustace Semmes, Memphis, Tennessee..... 51

Emotional Aspects of Medical Rehabilitation. A. Ray Dawson, Richmond, Virginia 53

Rehabilitation of the Amputee Patient. Donald A. Covalt, New York, New York 57

Human Relations in Industry. R. Lomax Wells, Washington, District of Columbia 60

Continued on next page

TABLE OF CONTENTS

Continued

Ocular Lesions in Children Simulating Retinoblastoma: A Report of Fourteen Cases of Pseudoglioma. J. Jack Stokes, Atlanta, Georgia 63

Surgical Treatment of Hemifacial Spasm. G. O. Proud, Kansas City, Kansas 66

Atopic Dermatitis. Paul A. O'Leary, Rochester, Minnesota 67

The Physiological Basis of Allergy. Arthur C. Guyton, University, Mississippi 73

Proctologic Facts and Observations. Newton D. Smith, Rochester, Minnesota 79

The Horizons of Anesthesiology. R. M. S. Barrett, Clayton, Missouri 84

EDITORIALS 86

Dr. Alphonse McMahon, President-Elect
Sodium in Hypertension
Miami Meeting
Group Disability Insurance
Twenty-Five Years Ago

OFFICERS of the Southern Medical Association and of Organizations meeting conjointly 90

PRESIDENT'S PAGE 91

BOOK REVIEWS 92

BOOKS RECEIVED 93

SOUTHERN MEDICAL NEWS 94

NEW BOOK

SHELDON, LOVELL and MATTHEWS

CLINICAL ALLERGY

Doctors in every field of medicine are frequently perplexed by allergic reactions. You'll find, therefore, that this practical new manual will have a tremendously wide appeal.

Written by Drs. John M. Sheldon, Kenneth Matthews and Robert G. Lovell, of the University of Michigan Medical School, it is a 413-page guide to diagnosis and treatment. Differential diagnosis, so important in this field, is given excellent coverage. Skin testing and patch testing are described in detail. Help is given on every type of allergy—food allergy, drug allergy, vascular allergy, collagen disease, etc.

SEND ORDERS TO

J. A. MAJORS COMPANY

New Orleans 12 Dallas 1 Atlanta 3

Tulane University

SCHOOL OF MEDICINE

DIVISION OF GRADUATE MEDICINE

Basic Science as Applied to Orthopedics, Five months, beginning February 1, 1953

Surgery, Gynecology and Traumatology For General Practitioners..January 12-17, 1953

Pediatrics (for Specialists)..February 23-28, 1953

Seminar on Low Back Pains..February 27-28, 1953

Symposium on Neoplastic Disease.....March 12 and 13, 1953

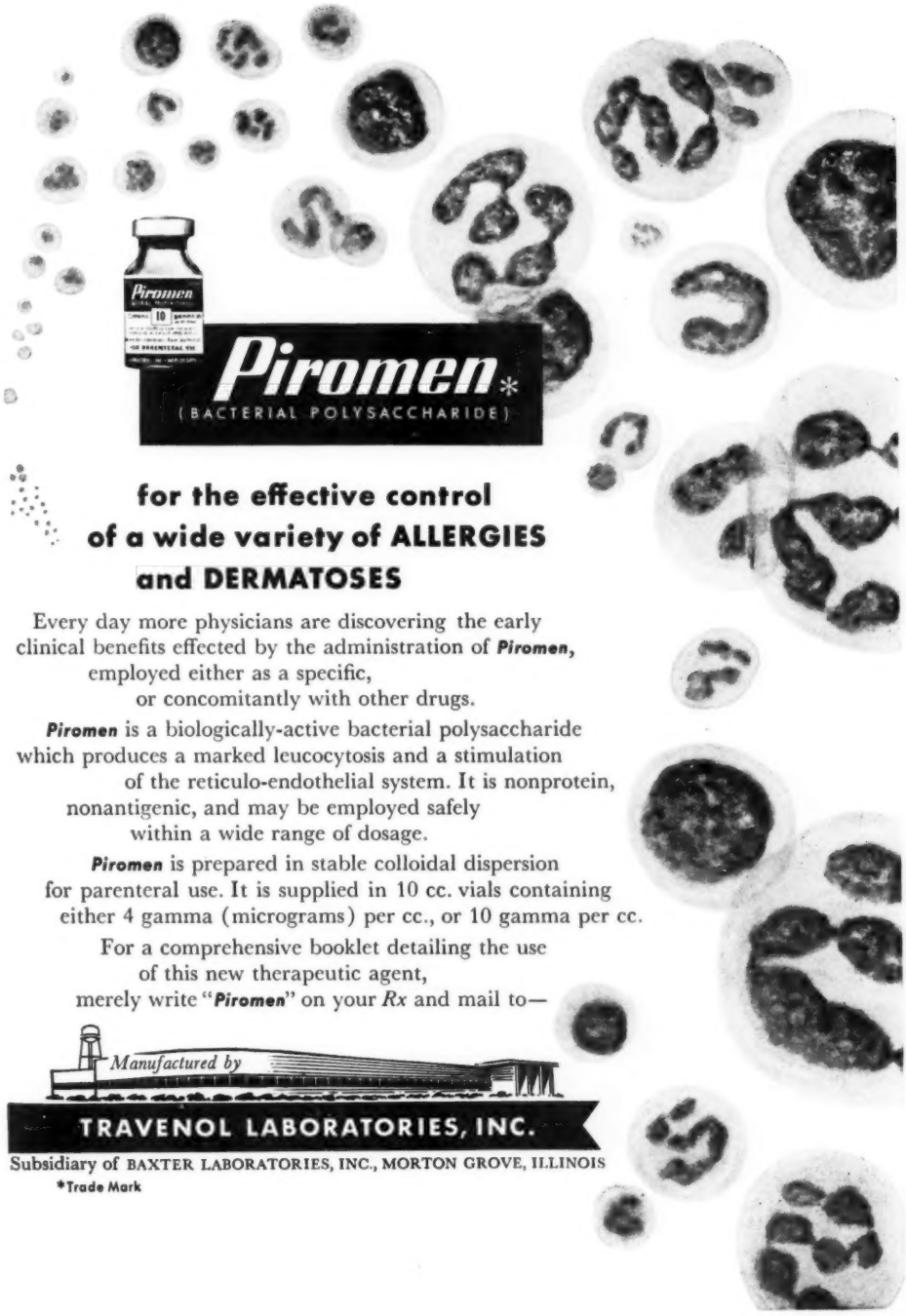
Maternal and Infant Care.....April 13-17, 1953
This course will be given at the Huey P. Long Charity Hospital, Pineville, Louisiana

Internal Medicine in General Practice.....March 23-27, 1953

For detailed information write

DIRECTOR

1430 Tulane Avenue New Orleans 12, La.



for the effective control of a wide variety of ALLERGIES and DERMATOSES

Every day more physicians are discovering the early clinical benefits effected by the administration of ***Piromen***, employed either as a specific, or concomitantly with other drugs.

Piromen is a biologically-active bacterial polysaccharide which produces a marked leucocytosis and a stimulation of the reticulo-endothelial system. It is nonprotein, nonantigenic, and may be employed safely within a wide range of dosage.

Piromen is prepared in stable colloidal dispersion for parenteral use. It is supplied in 10 cc. vials containing either 4 gamma (micrograms) per cc., or 10 gamma per cc.

For a comprehensive booklet detailing the use of this new therapeutic agent, merely write "***Piromen***" on your *Rx* and mail to—

Manufactured by

TRAVENOL LABORATORIES, INC.

Subsidiary of BAXTER LABORATORIES, INC., MORTON GROVE, ILLINOIS

*Trade Mark

Four potent antibacterials offer five major advantages

It is in the treatment of pneumonia, tonsilitis and scarlet fever in children that the most dramatic results have been reported following oral *use of penicillin with triple sulfonamides.*

Pentresamide-®

SHARP & DOHME

TABLETS TRIPLE SULFONAMIDE WITH PENICILLIN

Superior results with penicillin-sulfonamide combinations have been widely reported in the treatment of many systemic infections. Simultaneous oral administration of penicillin and three sulfonamides offers five major advantages: (1) wider antibacterial range, (2) possible synergistic action, (3) minimized bacterial resistance, (4) reduced renal toxicity, (5) convenient dosage form.

A number of hypotheses have been advanced to explain the superiority of penicillin-sulfonamide combinations. Although Bigger agrees with many other investigators that an additive antimicrobial effect may be involved, he further reasons that "If . . . the point of attack is different, such organisms as had survived the action of the first substance would become exposed to that of the second, and, if susceptible to it, would succumb."[1]

It is, of course, well known that penicillin and the sulfonamides do, in fact, attack microorganisms in different ways. Penicillin interferes with bacterial multiplication,[2] whereas bacterial "starvation" is effected by the sulfonamides.

The many advantages of triple sulfonamide therapy are now thoroughly established.

Dosage:

Adults—Mild or moderately severe infections (due to susceptible organisms) and preoperatively to prevent secondary infections: 1 or 2 tablets four times a day. Children—According to weight and condition.

PENTRESAMIDE-250 is supplied in bottles of 60 and 250 tablets (slotted).

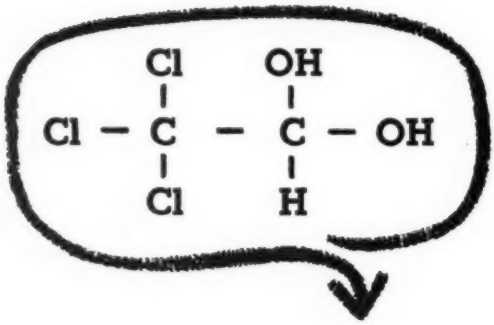
Sharp & Dohme, Philadelphia 1, Pa.

1. Bigger, J.W.: Lancet, 2:46, 1950.
2. Herrell, W.E.: Penicillin and Other Antibiotic Agents, W.B. Saunders, Philadelphia, 1945.

Penicillin and the sulfonamides attack bacteria in different ways

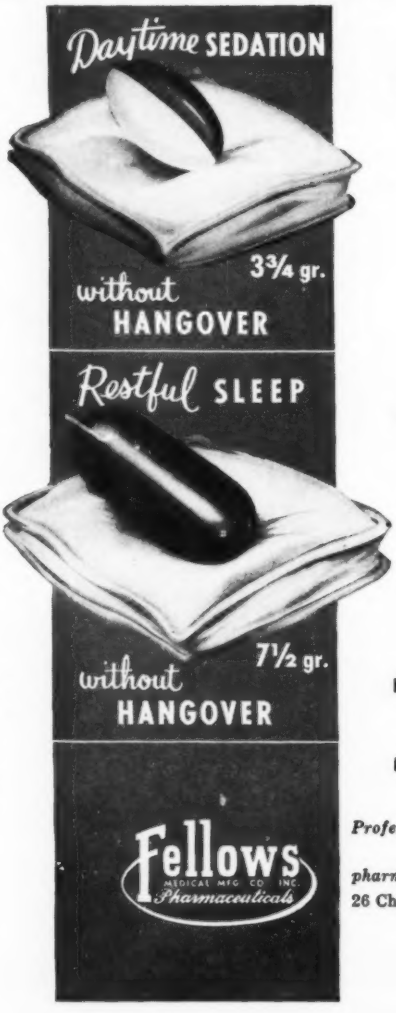
250

Each PENTRESAMIDE-250 *Tablet contains potassium penicillin-G, 250,000 units; sulfamerazine, 0.1 Gm.; sulfadiazine, 0.2 Gm.; sulfamethazine, 0 2 Gm.*



CAPSULES CHLORAL HYDRATE – *Fellows*

ODORLESS • NON-BARBITURATE • TASTELESS



AVAILABLE:

CAPSULES CHLORAL HYDRATE – Fellows

3¾ gr. (0.25 Gm.) BLUE and WHITE CAPSULES
bottles of 24's
100's

7½ gr. (0.5 Gm.) BLUE CAPSULES
bottles of 50's

3¾ gr. (0.25 Gm.) *BLUE and WHITE* CAPSULES CHLORAL HYDRATE – *Fellows*

Small doses of Chloral Hydrate (3¾ gr. Capsules Fellows) completely fill the great need for a daytime sedative. The patient becomes tranquil and relaxed yet is able to maintain normal activity.

DOSAGE: One 3¾ gr. capsule three times a day after meals.

7½ gr. (0.5 Gm.) *BLUE* CAPSULES CHLORAL HYDRATE – *Fellows*

Restful sleep lasting from five to eight hours. "Chloral Hydrate produces a normal type of sleep, and is rarely followed by hangover."[1] Pulse and respiration are slowed in the same manner as in normal sleep. Reflexes are not abolished, and the patient can be easily and completely aroused . . . awakens refreshed.[2-3-4]

DOSAGE: One to two 7½ gr., or two to four 3¾ gr. capsules at bedtime.

EXCRETION—Rapid and complete, therefore no depressant after-effects.[3-4]

Professional samples and literature on request

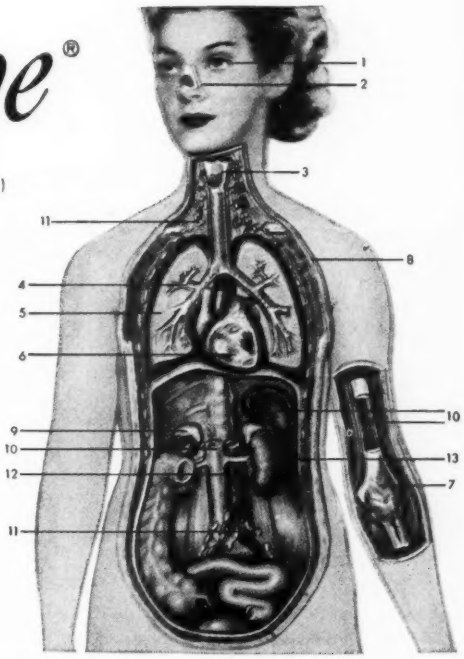
pharmaceuticals since 1866
26 Christopher St., New York 14, N. Y.

1. Hyman, H. T.: An Integrated Practice of Medicine (1950)
2. Rehfuss, M. R. et al: A Course in Practical Therapeutics (1948)
3. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics (1941), 22nd printing, 1951.
4. Sollman, T.: A Manual of Pharmacology, 7th ed. (1948), and Useful Drugs, 14th ed. (1947)

Cortone®

ACETATE

(CORTISONE ACETATE, MERCK)



The many indications for CORTONE *highlight its therapeutic importance in everyday practice*

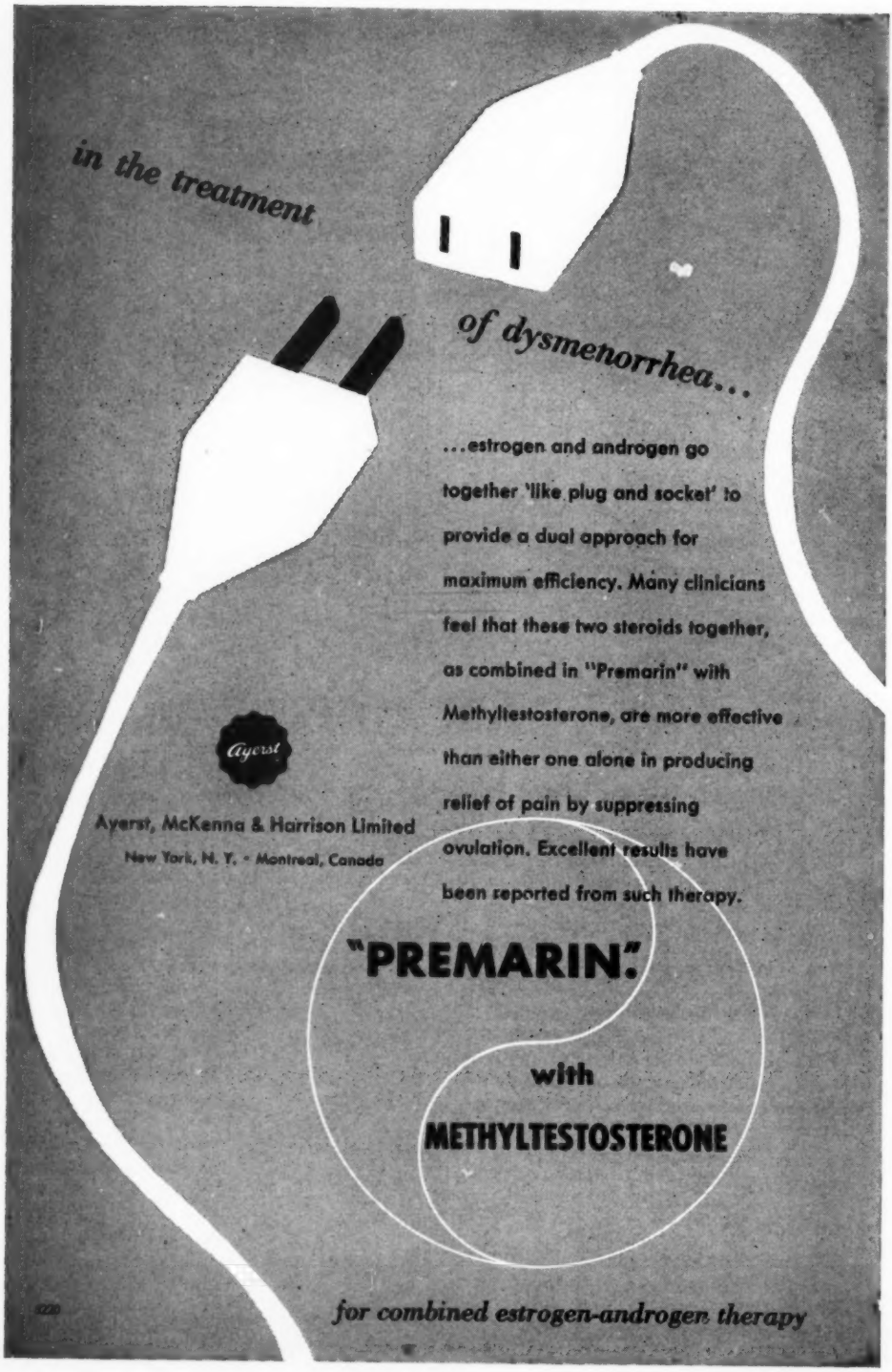
Primary Site of Pathology and Indications

1. EYE—Inflammatory eye disease. **2. NOSE**—Intractable hay fever. **3. LARYNX**—Laryngeal edema (allergic). **4. BRONCHI**—Intractable bronchial asthma. **5. LUNG**—Sarcoidosis. **6. HEART**—Acute rheumatic fever with carditis. **7. BONES AND JOINTS**—Rheumatoid arthritis; Rheumatoid spondylitis; Acute gouty arthritis; Still's Disease; Psoriatic arthritis. **8. SKIN AND CONNECTIVE TISSUE**—Pemphigus; Exfoliative dermatitis; Atopic dermatitis; Disseminated lupus erythematosus; Scleroderma (early); Dermatomyositis; Poison Ivy. **9. ADRENAL GLAND**—Congenital adrenal hyperplasia; Addison's Disease; Adrenalectomy for hypertension, Cushing's Syndrome, and neoplastic diseases. **10. BLOOD, BONE MARROW, AND SPLEEN**—Allergic purpura; Acute leukemia† (lymphocytic or granulocytic); Chronic lymphatic leukemia.† **11. LYMPH NODES**—Lymphosarcoma†; Hodgkin's Disease†. **12. ARTERIES AND CONNECTIVE TISSUE**—Periarteritis nodosa (early). **13. KIDNEY**—Nephrotic Syndrome, without uremia (to induce withdrawal diuresis). **14. VARIOUS TISSUES**—Sarcoidosis; Angioneurotic edema; Drug sensitization; Serum sickness; Waterhouse-Friderichsen Syndrome.

†Transient beneficial effects.

CORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of cortisone.*

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY


in the treatment
of dysmenorrhea...
...estrogen and androgen go together 'like plug and socket' to provide a dual approach for maximum efficiency. Many clinicians feel that these two steroids together, as combined in "Premarin" with Methyltestosterone, are more effective than either one alone in producing relief of pain by suppressing ovulation. Excellent results have been reported from such therapy.
Ayerst
Ayerst, McKenna & Harrison Limited
New York, N. Y. - Montreal, Canada
"PREMARIN"
with
METHYLTESTOSTERONE
for combined estrogen-androgen therapy

Upjohn

cortisone for inflammation, neomycin for infection:

Each gram contains:
Cortisone Acetate . . . . . 15 mg.
Neomycin Sulfate . . . . . 5 mg.
(equivalent to 3.5 mg. neomycin base)

Available in 1 drachm tubes with applicator tip

The Upjohn Company, Kalamazoo, Michigan

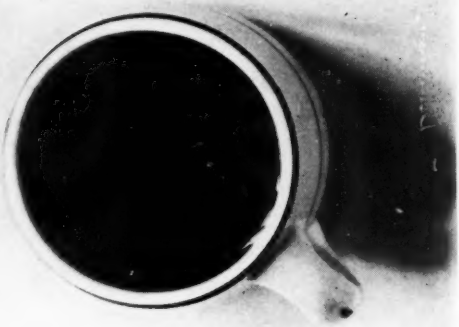
Neosone

Trademark

OPHTHALMIC OINTMENT

For the nervous patient

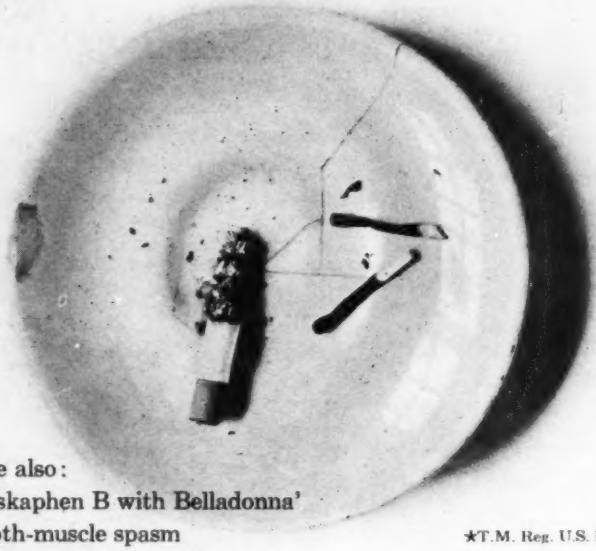
with poor appetite



Eskaphen B* elixir & tablets

(phenobarbital plus thiamine)

Smith, Kline & French Laboratories, Philadelphia

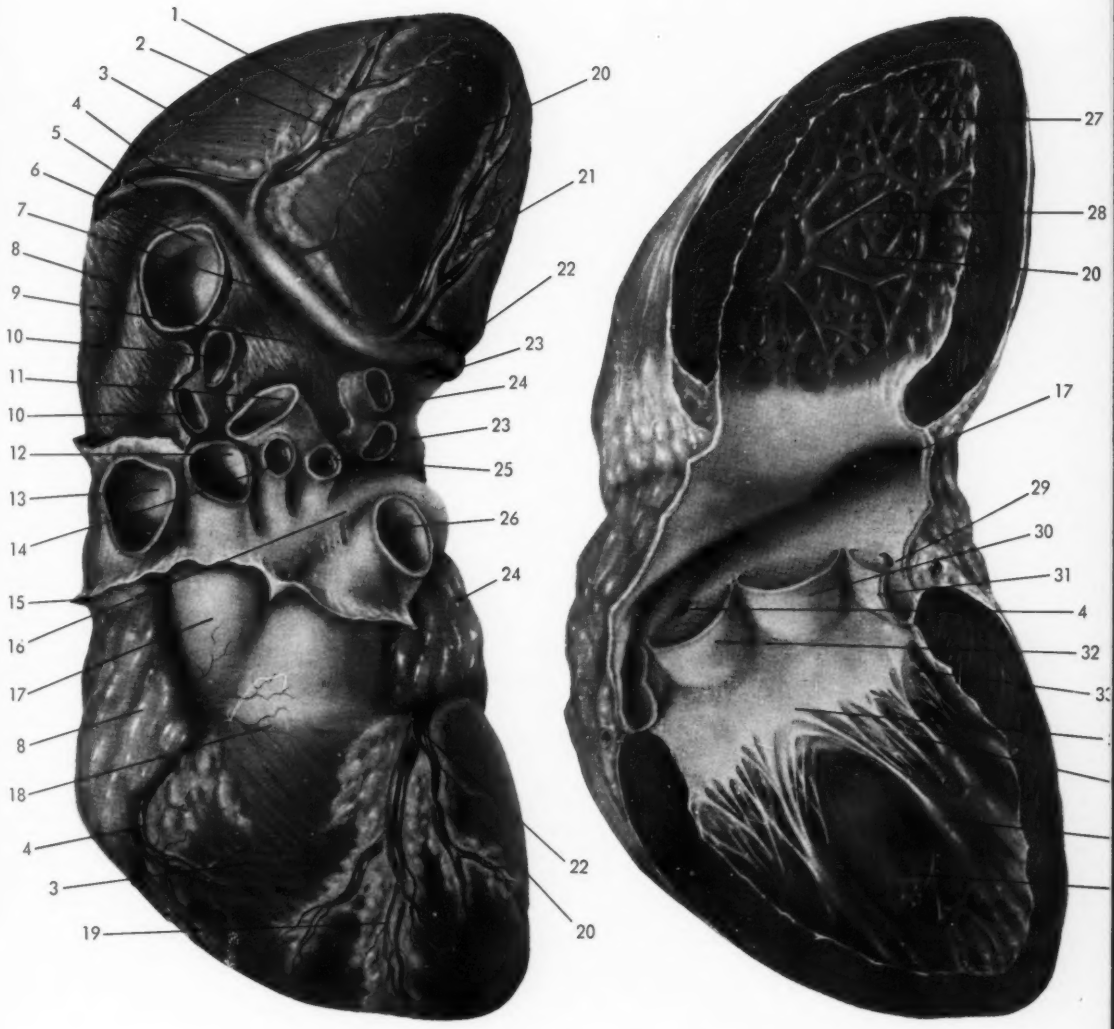


Available also:
elixir 'Eskaphen B with Belladonna'
for smooth-muscle spasm

★T.M. Reg. U.S. Pat. Off.

Each 5 cc. teaspoonful of 'Eskaphen B' Elixir and each Tablet contains phenobarbital, ¼ gr.; thiamine hydrochloride, 5 mg. Each 5 cc. teaspoonful of elixir 'Eskaphen B with Belladonna' contains total natural belladonna alkaloids, 0.2 mg.; phenobarbital, ¼ gr.; thiamine hydrochloride, 5 mg.

Anatomy *of the* Heart



1 Middle cardiac vein
2 Posterior descending branch of right coronary artery
3 Right ventricle
4 Right coronary artery
5 Small cardiac vein
6 Inferior vena cava
7 Coronary sinus
8 Right auricle
9 Left atrium
10 Right pulmonary vein
11 Right branch of pulmonary artery
12 Innominate artery
13 Superior vena cava
14 Left common carotid artery
15 Pericardium
16 Aortic arch
17 Ascending aorta
18 Conus arteriosus
19 Anterior descending branch of left coronary artery
20 Left ventricle
21 Posterior vein of left ventricle
22 Great cardiac vein
23 Left pulmonary vein
24 Left auricle
25 Left subclavian artery
26 Left branch of pulmonary artery
27 Trabeculae carneae
28 Trabecula tendinea
29 Left coronary artery
30 Posterior semilunar valve
31 Left semilunar valve
32 Right semilunar valv
33 Posterior cusp of mi (bicuspid) valve
34 Anterior cusp of mit (bicuspid) valve
35 Chordae tendineae
36 Papillary muscle

This is one of a series of paintings by Paul Peck, illustrating the anatomy of various organs and tissues of the body which are frequently attacked by infection, where aureomycin may prove useful.

Aureomycin

HYDROCHLORIDE CRYSTALLINE

in

Infections Involving the Heart

ENDOCARDITIS—Aureomycin has established itself as one of the most valuable agents available for the treatment of infections involving the heart. Aureomycin is now recognized as a highly effective antibiotic against the organisms most frequently encountered in endocarditis—staphylococci, *Str. viridans*, *Str. fecalis* and other enterococci. These organisms are being increasingly found resistant to penicillin and streptomycin. Endocarditis caused by these organisms has responded to aureomycin after failure of other antibiotics. Aureomycin is held by many physicians to be an antibiotic of choice for prophylactic use in patients with organic cardiac disease who require oral, intestinal, or rectal surgery, or any transurethral operative procedure. Endocarditis complicating typhus and brucellosis has responded well to aureomycin therapy.

PERICARDITIS—The importance of aureomycin in pericarditis has been demonstrated by its successful use after failure of other therapy—in acute nonspecific pericarditis, possibly of viral etiology; *H. influenzae* pericarditis; tularemic pericarditis; and actinomycotic pericarditis.

RHEUMATIC FEVER—Because aureomycin is an antibiotic with a wide range of effectiveness against the pathogenic strains of streptococci, its use has been recommended for the prevention of acute rheumatic fever and its cardiac complications.

* * *

PACKAGES: *Capsules:* 50 mg.–Vials of 25 and 100; 100 mg.–Vials of 25 and bottles of 100; 250 mg.–Vials of 16 and bottles of 100. *Ophthalmic Solution:* Vials of 25 mg.; solution prepared by adding 5 cc. distilled water.

LEDERLE LABORATORIES DIVISION

AMERICAN Cyanamid COMPANY

30 ROCKEFELLER PLAZA, NEW YORK 20, N.Y.

A bibliography of 39 selected references will be mailed on request.

rapid response

new

non-hormonal

synthetic

"The latent period between the initiation of therapy and the appearance of appreciable benefit was short."[1]

BUTAZOLIDIN
(brand of phenylbutazone)

orally effective for relief of

ARTHRITIS *and allied disorders*

BUTAZOLIDIN brings quick relief and, often, functional improvement, to the majority of patients with rheumatoid arthritis, osteoarthritis, spondylitis, gout, arthritis with psoriasis, peritendinitis, fibrositis, and other painful musculoskeletal disorders.[1-3]

BUTAZOLIDIN

- **Broad Therapeutic Spectrum**
- **Potent Therapeutic Effect**
- **Prompt Action**
- **Low Ratio of Serious Side Effects**
- **Oral Effectiveness**

BUTAZOLIDIN is well within the means of the average patient.

In order to obtain optimal results and to avoid untoward reaction it is highly desirable for the physician to become thoroughly acquainted with the characteristics of BUTAZOLIDIN before prescribing it. Physicians are urged to read the package circular carefully or to write for the BUTAZOLIDIN brochure, which will gladly be sent on request.

Availability: BUTAZOLIDIN® (brand of phenylbutazone) is issued in yellow-coated tablets of 200 mg. and in red-coated tablets of 100 mg.

1. Steinbrocker, O.; Berkowitz, S.; Ehrlich, M.; Elkind, M., and Carp, S.: Paper read before the Annual Meeting of the American Rheumatism Association, Chicago, Ill., June 6, 1952.
2. Kuzell, W. C.; Schaffarzick, R. W.; Brown, B., and Mankle, E. A.: J.A.M.A. *149*:729 (June 21) 1952.
3. Smith, C. H., and Kunz, H. G.: J. M. Soc. New Jersey *49*:306, 1952.

Geigy

GEIGY PHARMACEUTICALS, *Division of Geigy Company, Inc.*
220 Church Street, New York 13, N. Y.

NOTES: TREATMENT OF ANAL PRURITUS

New! SOOTHING, READY-TO-USE PADS REPLACE HARSH TOILET TISSUE

What are they?

Tucks are pure, soft outing flannel pads moistened and mildly medicated with a special solution containing witch hazel and glycerin.

Gentle, thorough

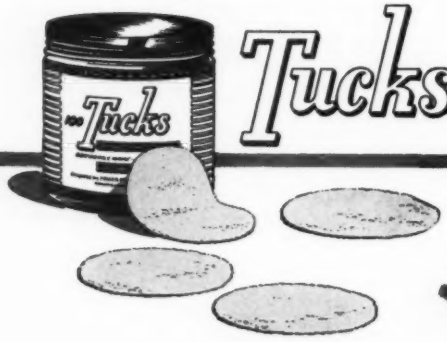
Being moist, Tucks clean the pruritic area completely, removing all vestiges of contaminating fecal material. Being soft, they cannot irritate sensitive anal tissue and cause further aggravation.

Majority improve

Numerous clinical reports indicate that a majority of cases of anal pruritus will show appreciable improvements when Tucks are prescribed to replace toilet tissue. Tucks have been recommended further as a prophylactic measure against all forms of anorectal disease which may be caused or aggravated by improper anal hygiene. We suggest you try Tucks for your next case of anal pruritus.

How supplied

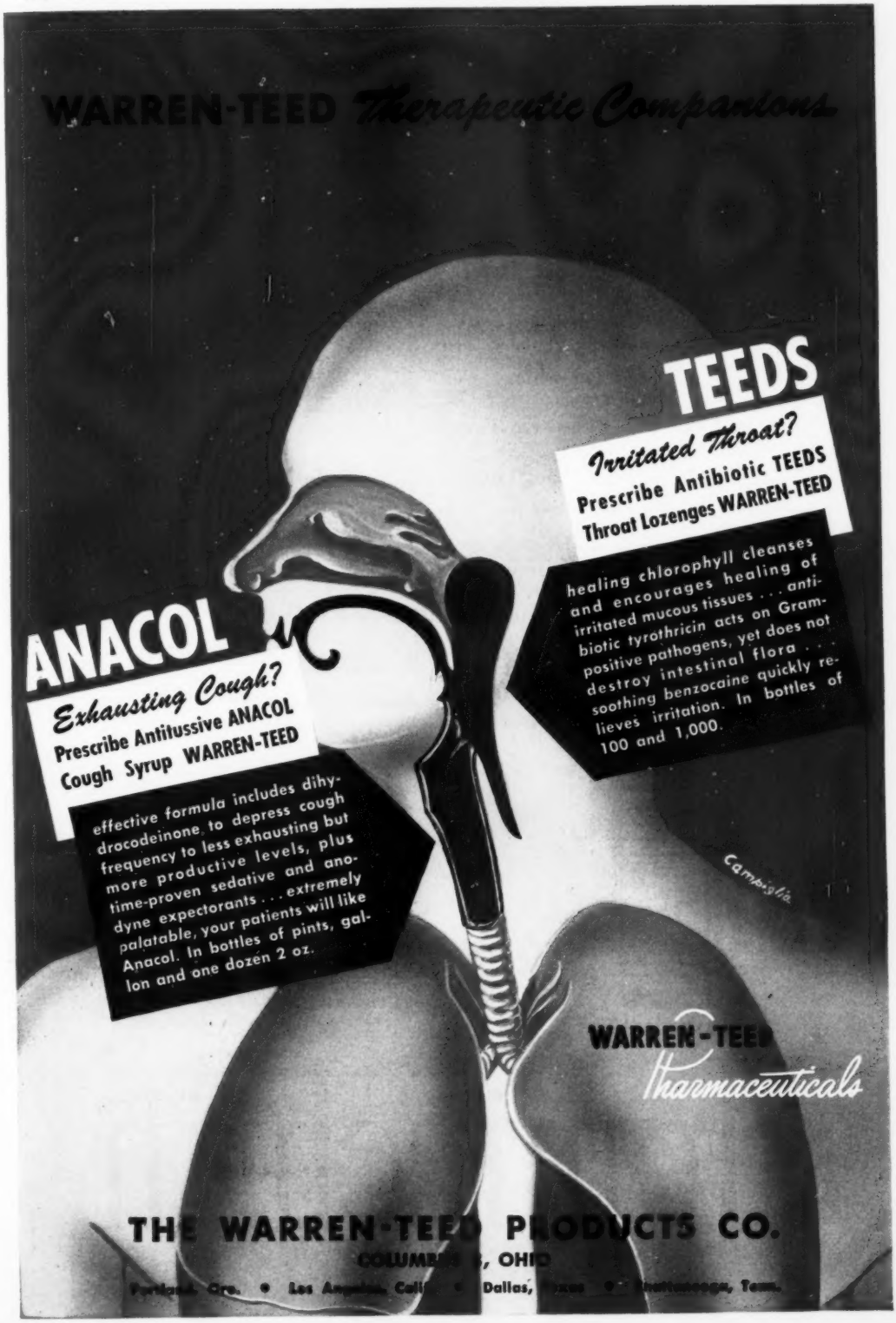
Tucks are provided in jars of 100. A supply for trial will be sent you upon written request. Addres Dept. S1, Fuller Pharmaceutical Co., 715 So. 10th St. Minneapolis 4, Minn.



Tucks

Mildly medicated cleansing cloths
Benadex • Benzocones • Hydrocil
Hydrocil Fortified • products of

fuller
PHARMACEUTICAL COMPANY


WARREN-TEED Therapeutic Companions
TEEDS
Irritated Throat?
Prescribe Antibiotic TEEDS
Throat Lozenges WARREN-TEED
healing chlorophyll cleanses and encourages healing of irritated mucous tissues . . . antibiotic tyrothricin acts on Gram-positive pathogens, yet does not destroy intestinal flora . . . soothing benzocaine quickly relieves irritation. In bottles of 100 and 1,000.
ANACOL
Exhausting Cough?
Prescribe Antitussive ANACOL
Cough Syrup WARREN-TEED
effective formula includes dihydrocodeinone, to depress cough frequency to less exhausting but more productive levels, plus time-proven sedative and anodyne expectorants . . . extremely palatable, your patients will like Anacol. In bottles of pints, gallon and one dozen 2 oz.
WARREN-TEED
Pharmaceuticals
THE WARREN-TEED PRODUCTS CO.
COLUMBUS, OHIO
Portland, Ore. • Los Angeles, Calif. • Dallas, Texas • Chattanooga, Tenn.

New, Improved 'Homicebrin' with Vitamin B_{12}

'Homicebrin' now provides *six* essential vitamins in a smooth, palatable, homogenized mixture.

Each 5 cc. contain:

Vitamin A (Palmitate)	3,000 U.S.P. units
Thiamin Chloride	1 mg.
Riboflavin	1.2 mg.
Vitamin B_{12} (Activity Equivalent)	3 mcg.
Ascorbic Acid	60 mg.
Vitamin D	1,000 U.S.P. units

Prescribe the 4-ounce or the economical 1-pint bottle. There is no increase in price.

Eli Lilly and Company
Indianapolis 6, Indiana, U.S.A.

Lilly

For the prophylaxis or treatment of multiple vitamin deficiencies in infants and children.

'Homicebrin'

(HOMOGENIZED MULTIPLE VITAMINS, LILLY)

only

only *gentia-jel* offers gentian violet in this new plastic single-dose disposable applicator for the daintiest, easiest way to apply this specific in **pregnancy moniliasis.**

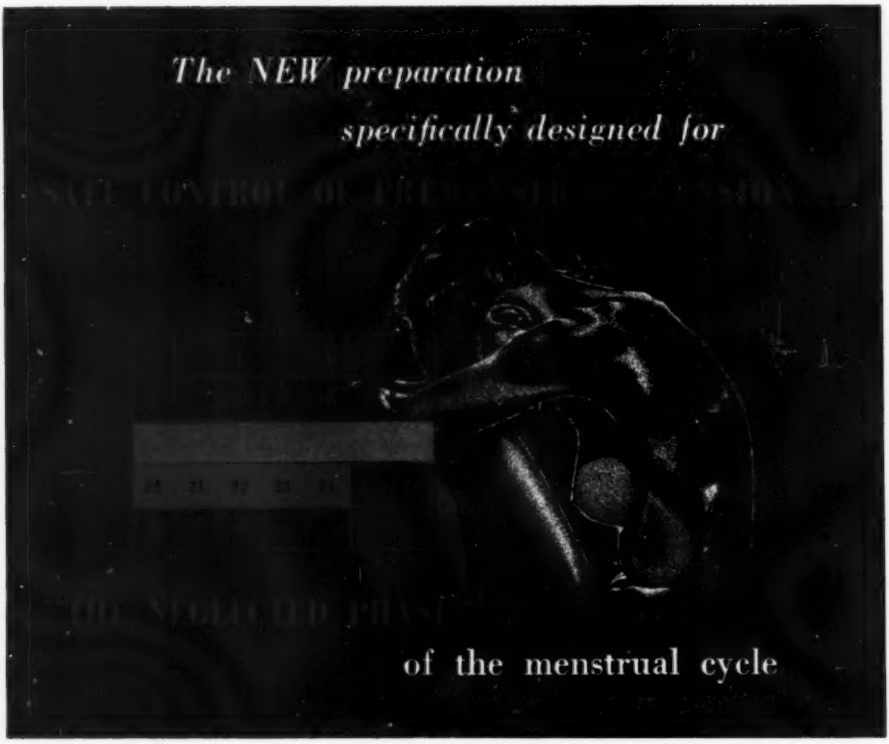
only *gentia-jel* offers gentian violet in a special wetting, acidifying, water-soluble base (polyethylene glycol) which permits intimate contact of this antimycotic with *Candida albicans* organisms... killing them quickly. Clinical record in pregnancy moniliasis: 93% combined cure and improvement, "noteworthy" relief from itch, burning, etc.[1] Safe to use until onset of labor.

only *gentia-jel* offers gentian violet therapy which can be used daily by the patient and doctor...without messiness and with minimal staining. Economical, too.

samples for office or patient use from...

Westwood Pharmaceuticals
division of Foster-Milburn Co., Dept. SM
468 Dewitt St., Buffalo 13, N. Y.

1. Waters, E. G., and Wager, H. P.: Amer. J. Obstet. & Gyn. 60:885, 1950.



PREVENTS SYMPTOM-PRODUCING WATER RETENTION...RELIEVES VASCULAR CONGESTION

Premenstrual tension is characterized by one or more of the following symptoms during the week *before* the menstrual flow begins: nervousness, irritability, breast tenderness, low backache, thirst and bloatiness.

neo Bromth is nontoxic, *non-hormonal* therapy. Each 80 mg. tablet contains 50 mg. of a new compound, pamabrom (2-amino-2-methyl-1-propanol 8-bromotheophyllinate) and 30 mg. of pyrilamine maleate.

Dosage: 2 *neo Bromth* Tablets twice daily (morning and night) beginning when symptoms usually occur (5 to 7 days before onset of menses). Discontinue at onset of flow.

neo Bromth is supplied in bottles of 100 tablets, on prescription only, at all leading prescription stores.

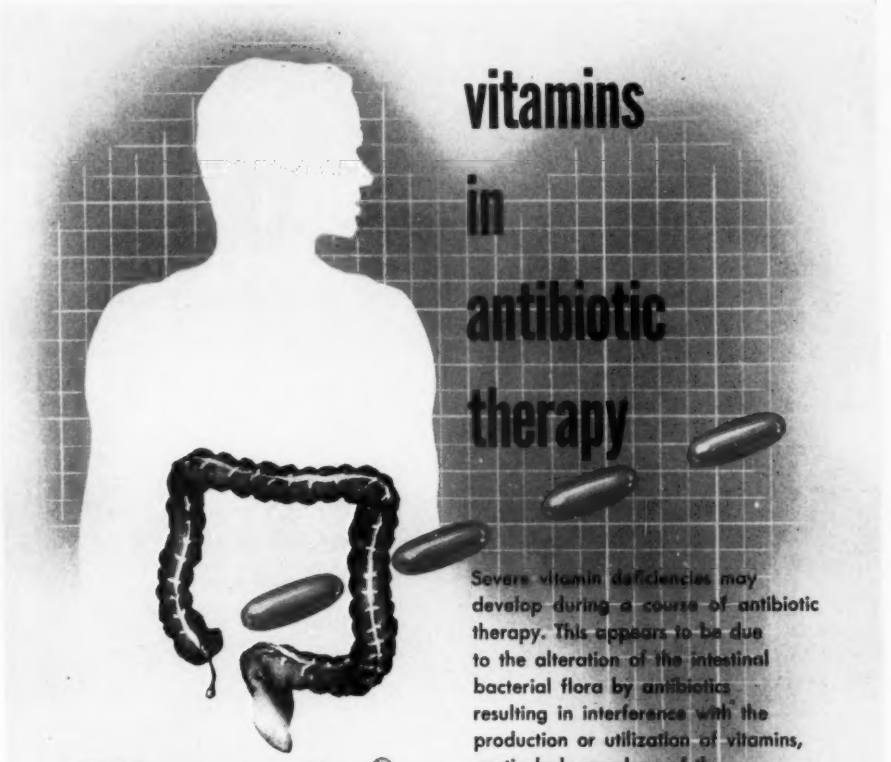
1. Bickers, W.: To be published.

neo Bromth®

Brand of Bromaleate, Brayten

BRAYTEN PHARMACEUTICAL COMPANY Chattanooga 9, Tennessee

Specialties For The Medical Profession Only.



vitamins in antibiotic therapy

Pluraxin®

High Potency
Multiple Vitamin Capsules

One or two capsules of Pluraxin daily usually suffice.

Available in bottles of 30 and 100 capsules.

Severe vitamin deficiencies may develop during a course of antibiotic therapy. This appears to be due to the alteration of the intestinal bacterial flora by antibiotics resulting in interference with the production or utilization of vitamins, particularly members of the vitamin B Complex[1,2]. Supplementary administration of vitamins is therefore indicated, especially after bacteriologic cure has been effected.[1]

SPECIAL THERAPEUTIC FORMULA

Vitamin A	25,000 units
Vitamin D_2 (calciferol)	1000 units
Vitamin B_1 (thiamine)	15 mg.
Vitamin B_2 (riboflavin)	10 mg.
Vitamin B_6 (pyridoxine)	2 mg.
→ Vitamin B_{12} (cyanocobalamin)	5 mcgm.
Folic acid	1 mg.
Calcium pantothenate	10 mg.
Nicotinamide	150 mg.
Vitamin C (ascorbic acid)	150 mg.

1. Gewin, H. M., and Friou, G. J.: Yale Jour. Biol. & Med., 23:332, Feb., 1951.

2. Marshall, H. C., Jr., Palmer, W. L., and Kirsner, J. B.: J. A. M. A., 144:900, Nov. 11, 1950.

Pluraxin, trademark reg. U. S. & Canada

WINTHROP-STEARNS INC. • NEW YORK 18, N. Y. • WINDSOR, ONT.

specify Abbott's *new oral antibiotic*

ERYTHROCIN

TRADE MARK

(ERYTHROMYCIN, ABBOTT)

E*specially effective against gram-positive organisms resistant to other antibiotics.*

L*ow toxicity; gastrointestinal disturbances rare; no serious side effects reported.*

S*pecial "high-blood-level" coating.*

Erythrocin, 0.1-Gm. (100-mg.) Tablets, bottle of 25.

INDICATIONS: Pharyngitis, tonsillitis, scarlet fever, erysipelas, pneumococcic pneumonia, osteomyelitis, pyoderma. *Also other organisms* susceptible to its action, which include staphylococci, streptococci, pneumococci, *H. influenzae*, *H. pertussis*, and corynebacteria.

DOSAGE: Total daily dose of 0.8 to 2 Gm., depending on severity of the infection. A total daily dose of 0.4 Gm. is often adequate in the treatment of pneumococcic pneumonia. *For the average adult* an initial dose of 0.1 to 0.4 Gm. is followed by doses in the same range every four to six hours. *For severely ill patients* doses up to 0.5 Gm. may be repeated at six-hour intervals if necessary. Satisfactory clinical response should appear in 24 to 48 hours if the causative organism is susceptible to ERYTHROCIN. Continue for 48 hours after temperature returns to normal. Abbott

1. McGuire et al. (1952), J. Antibiotics & Chemo., 2:281, June.
2. Heilman et al. (1952), Proc. Staff Meet. Mayo Clin., 27:385, July 16.
3. Haight and Finland (1952), New Eng. J. Med., 247:227, Aug. 14.

1-68

A. H. ROBINS CO., INC.

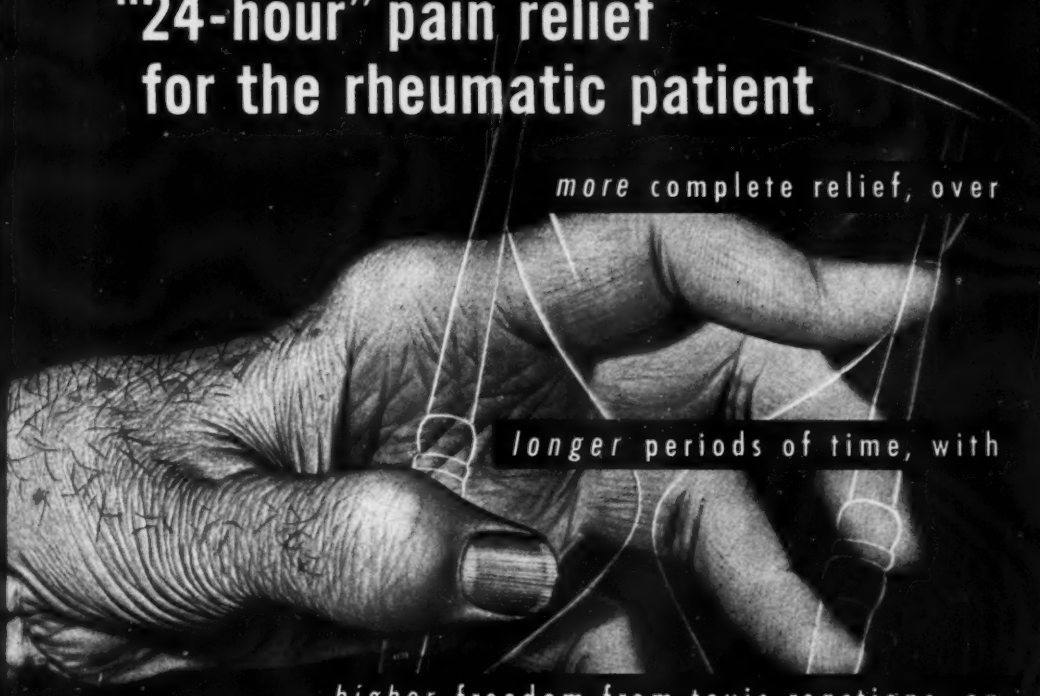
More patients get

"24-hour" pain relief* for the rheumatic patient

more complete relief, over

longer periods of time, with

higher freedom from toxic reactions, on

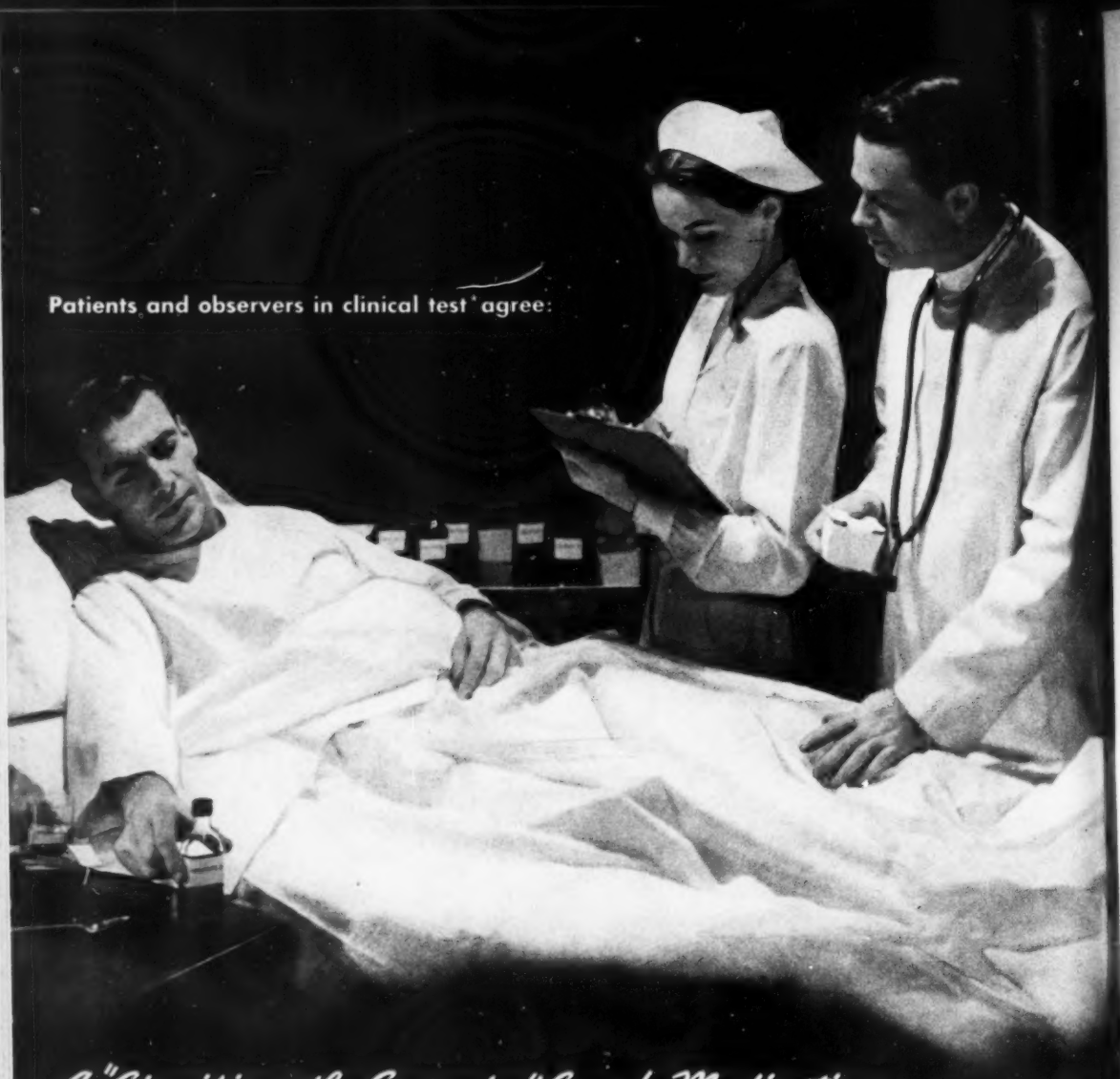


Pabalate® Robins

Pabalate®-Sodium Free

FORMULA: Pabalate—Sodium salicylate, U.S.P. 0.3 Gm. (5 gr.), and para-aminobenzoic acid (as the potassium salt) 0.3 Gm. (5 gr.), in each yellow enteric coated Tablet or 5 cc. of Liquid. Pabalate-Sodium Free—Ammonium salicylate 0.3 Gm. (5 gr.) and para-aminobenzoic acid (as the potassium salt) 0.3 Gm. (5 gr.) in each Persian Rose color, enteric coated Tablet.

*Smith, E. T.: A. Internat. 70-195, 1938.



A "Significantly Superior" Cough Medication

- Increases respiratory tract fluid almost 200%
- Reduces coughing spells up to 70%
- Relieves bronchiolar constrictions
- Improves patient's mood
- No adverse side effects

Robitussin® Robins

FORMULA: Glyceryl guaiacolate 100 mg., and dextromethorphan hydrochloride 1 mg., per 5 cc., in a palatable aromatic syrup.

*Cass, L. J. and Frederik, W. S.: Am. Pract. and Digest of Treat., 2:844, 1951. Report of blind test on 52 hospitalized patients.

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA

Ethical Pharmaceuticals of Merit since 1878

A. H. ROBINS CO. INC. 75TH ANNIVERSARY

Ciba
Presents

A New Advance
in Sulfonamide Safety ...

ELKOSIN®

BRAND OF SULFADIMETINE

Double scored 0.5 Gm. tablets.
Bottles of 100 and 1000.

Syrup (0.25 Gm. Elkosin per 4 cc.), microcrystalline suspension in strawberry-flavored vehicle.
Bottles of 16 fluidounces.

- Remarkably low incidence of side effects — less than 5%
- Lowest acetylation yet reported — less than 10% in blood
- Adequate solubility — alkalis not needed
- Renal complications rare
- High, sustained blood levels

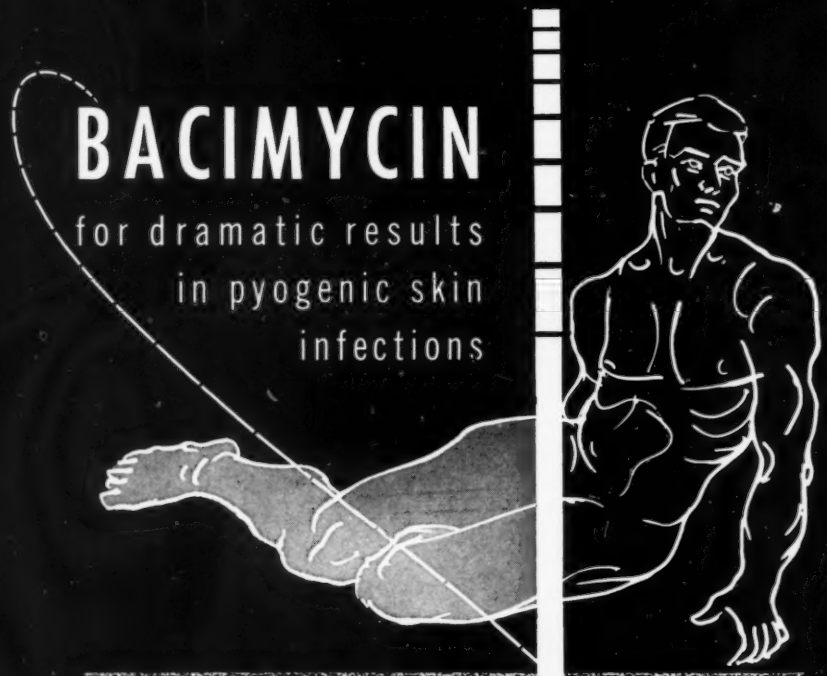
WIDE ANTIBACTERIAL SPECTRUM

Ciba PHARMACEUTICAL PRODUCTS, INC., SUMMIT, N. J. 2-1690 M

BACITRACIN-NEOMYCIN OINTMENT

BACIMYCIN

for dramatic results in pyogenic skin infections



indications

impetigo ecthyma paronychia
infectious eczematoid dermatoses
furunculosis pustular folliculitis otitis externa
cutaneous ulcers surgical dressings
impetiginized dermatoses seborrheic dermatitis
infected burns and wounds hemolytic streptococcal dermatoses

Neomycin was more effective for most skin infections than other topical agents used in a series of 675 cases.[1]

Bacitracin has been widely favored for local treatment of skin infections.[2]

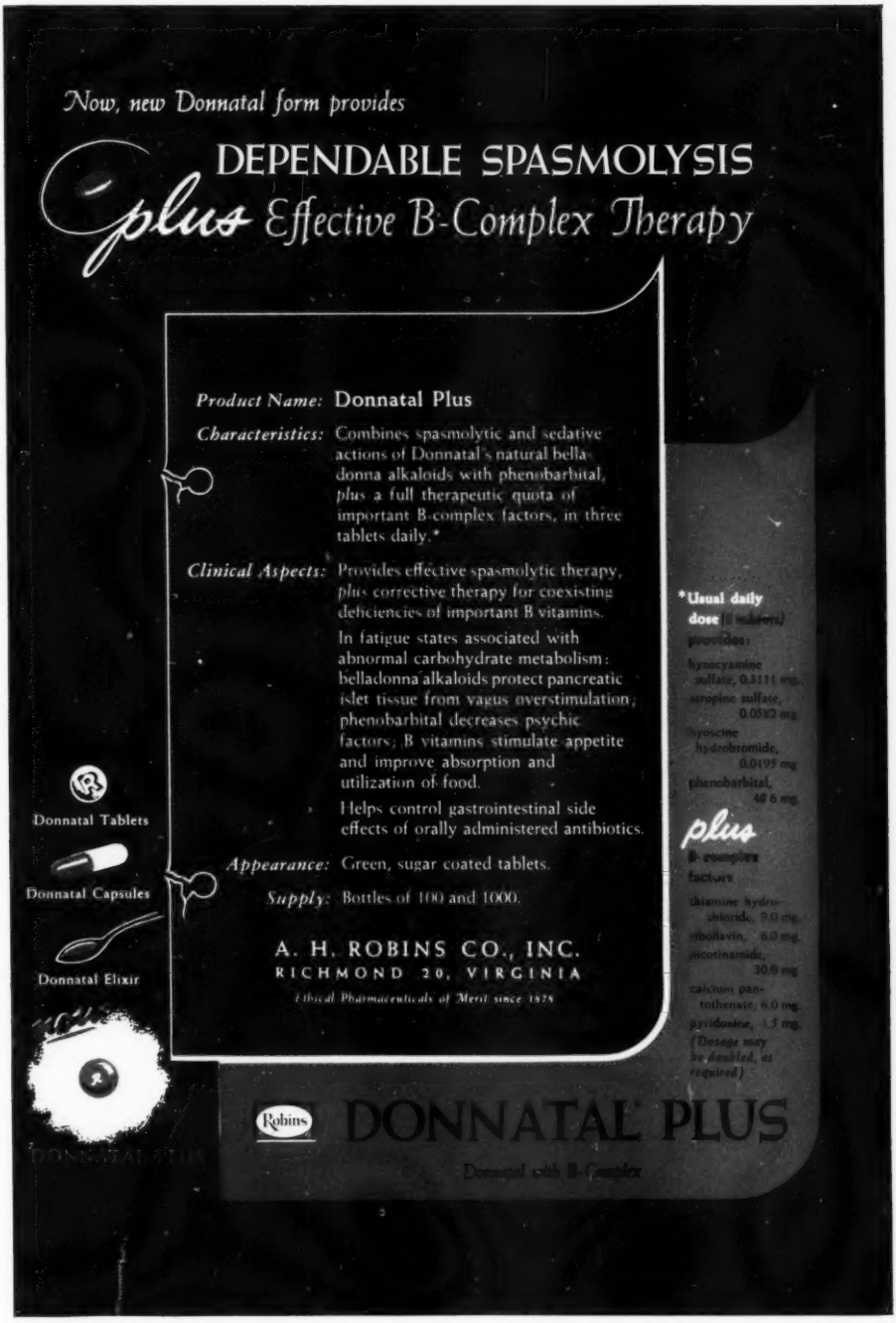
The **combination** of both antibiotics extends the broad-spectrum activity of each.[3]

Literature available including antibiotic comparison chart.

1. Kile, R. L., and Rockwell, E. M.: J.A.M.A. 148:339, 1952. 2. Livingood, C. S., et al.: J.A.M.A. 148:334, 1952. 3. Rhoads, P. S.: G.P. 5:67, 1952.

Supplied: ½ oz. tubes

Walker
LABORATORIES, INC.
MT. VERNON, N. Y.


Now, new Donnatal form provides
DEPENDABLE SPASMOLYSIS
plus Effective B-Complex Therapy
Product Name: Donnatal Plus
Characteristics: Combines spasmolytic and sedative actions of Donnatal's natural belladonna alkaloids with phenobarbital, plus a full therapeutic quota of important B-complex factors, in three tablets daily.*
Clinical Aspects: Provides effective spasmolytic therapy, plus corrective therapy for coexisting deficiencies of important B vitamins.
In fatigue states associated with abnormal carbohydrate metabolism: belladonna alkaloids protect pancreatic islet tissue from vagus overstimulation; phenobarbital decreases psychic factors; B vitamins stimulate appetite and improve absorption and utilization of food.
Helps control gastrointestinal side effects of orally administered antibiotics.
Appearance: Green, sugar coated tablets.
Supply: Bottles of 100 and 1000.
A. H. ROBINS CO., INC.
RICHMOND 20, VIRGINIA
Ethical Pharmaceuticals of Merit since 1878
Donnatal Tablets
Donnatal Capsules
Donnatal Elixir
*Usual daily dose (3 tablets) provides:
hyoscyamine sulfate, 0.3111 mg.
atropine sulfate, 0.0582 mg.
hyoscine hydrobromide, 0.0195 mg.
phenobarbital, 48.6 mg.
plus
B-complex factors
thiamine hydrochloride, 9.0 mg.
riboflavin, 6.0 mg.
nicotinamide, 30.0 mg.
calcium pantothenate, 6.0 mg.
pyridoxine, 1.5 mg.
(Dosage may be doubled, as required)
Robins
DONNATAL PLUS
Donnatal with B-Complex

two outstanding reasons why

pyraldine®

is so highly effective for the persistent, dry and unproductive cough

1 **Dihydrocodeinone** is used (in equivalent dosage) instead of codeine, for its exceptional freedom from such side effects as nausea, vomiting, constipation and retention of sputum.

2 **Pyra-Maleate®,** the highly effective antihistaminic, is included in the formula, for suppression of the allergic manifestations which frequently complicate the common cold.

Pyraldine also helps liquefy mucus and has a local soothing effect on irritated mucosa.

Each fluidounce of PYRALDINE contains:

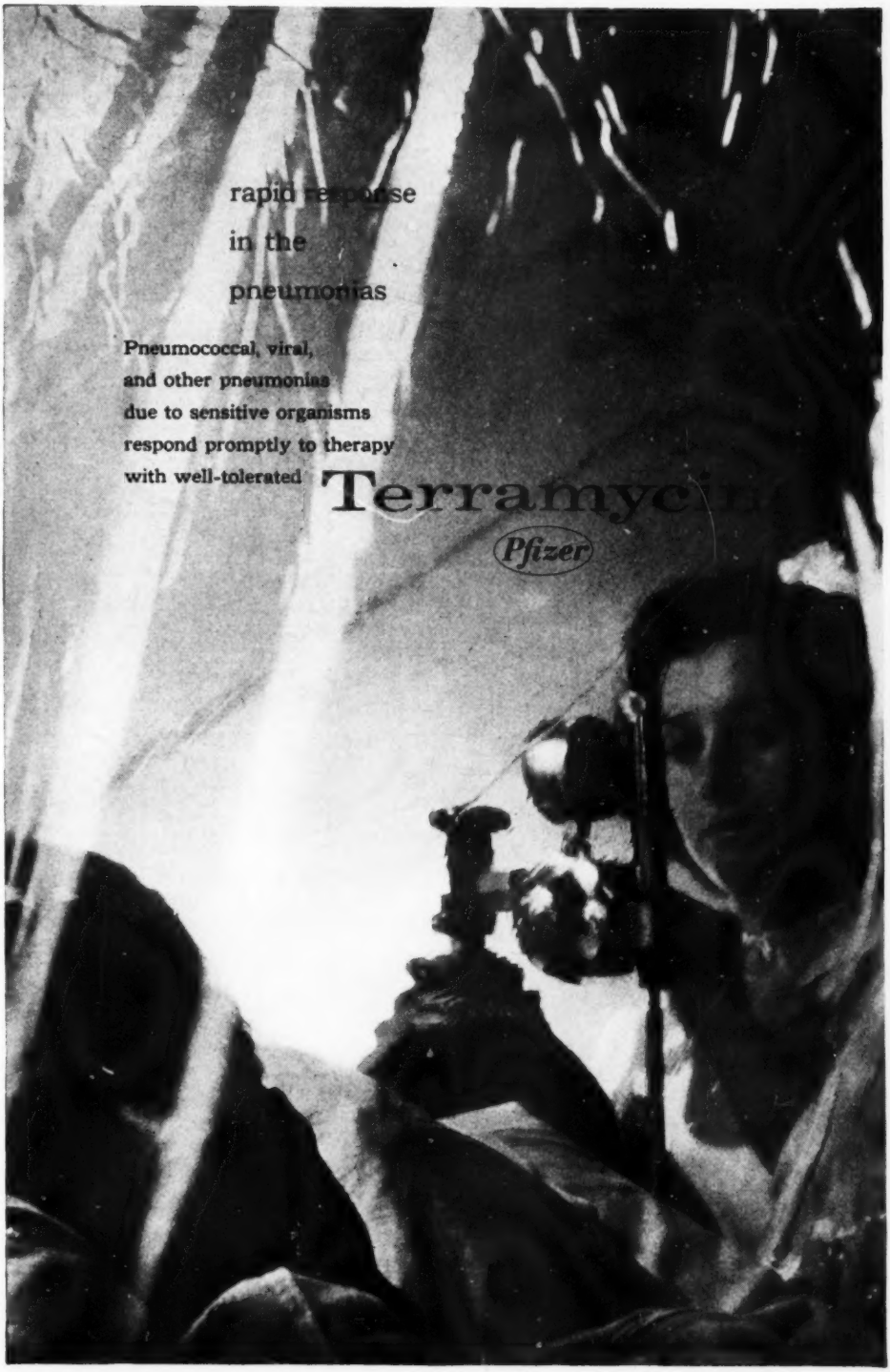
Dihydrocodeinone bitartrate (*Warning: May be habit forming*)	⅜ gr.
Pyra-Maleate® (*Brand of Pyrilamine Maleate*)	75 mg.
Ammonium chloride	6 gr.
Citric acid	5 gr.

In a mentholated, fruit-flavored, syrup vehicle.

PYRALDINE Expectorant is supplied in bottles of one pint and one gallon. Narcotic registry number required.

VANPELT & BROWN, INC., *Pharmaceutical Chemists*

RICHMOND 4, VIRGINIA


rapid response
in the
pneumonias
Pneumococcal, viral,
and other pneumonias
due to sensitive organisms
respond promptly to therapy
with well-tolerated
Terramyc
Pfizer

Coughing your head off!

for effective cough therapy

Hycodan® BITARTRATE

(Dihydrocodeinone Bitartrate)

Three forms available: Oral Tablets (5 mg. per tablet), Syrup (5 mg. per teaspoonful), Powder (for compounding).

May be habit forming; narcotic blank required.

Average adult dose 5 mg. Literature on request.

Endo®

Endo Products Inc., Richmond Hill 18, N.Y.

A topic of staff room discussion

Aminodrox

increases usefulness of oral aminophylline

send for detailed literature and sample

In the form of AMINODROX, three out of four patients can be given therapeutically effective *oral* doses of aminophylline.

This is possible with AMINODROX because gastric disturbance is avoided.

Now congestive heart failure, bronchial and cardiac asthma, status asthmaticus and paroxysmal dyspnea can be treated successfully with *oral* aminophylline in the form of AMINODROX.

* Aminodrox Tablets contain 1½ gr. aminophylline with 2 gr. activated aluminum hydroxide.

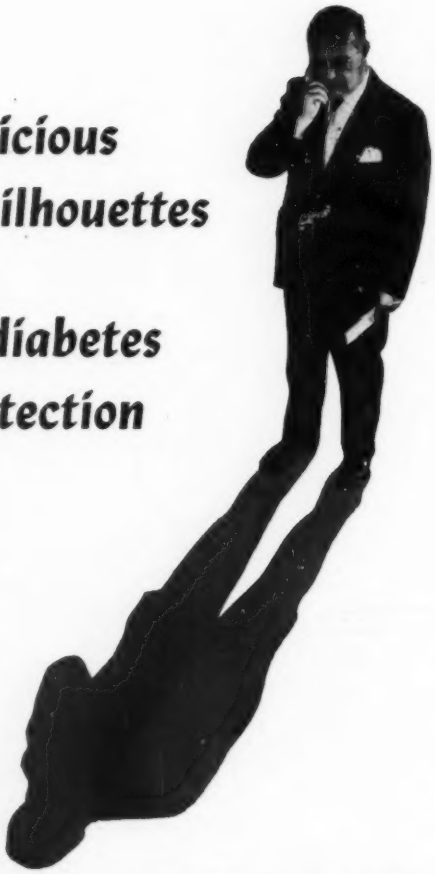
Aminodrox-Forte Tablets contain 3 gr. aminophylline with 4 gr. activated aluminum hydroxide.

Also available with ¼ gr. phenobarbital.

S.E. Massengill

BRISTOL, TENNESSEE

suspicious silhouettes in diabetes detection



Every overweight patient presents grounds for suspicion of diabetes. ". . among 1,900 men whose diabetes began after age 35, more than 80 per cent were overweight (5 per cent or more above average weight for age) before the onset of the disease."[1] In a recent survey the incidence of diabetes was found to be *5.7 per cent* in individuals over 35 who were 10 per cent or more overweight: among those whose weight was normal or below normal, only 2.4 per cent were diabetic.[2]

When a "suspicious silhouette" is seen, the physician suspecting diabetes can quickly and easily test for urine-sugar with *Clinitest* (Brand) Reagent Tablets. The test is simple, reliable and direct-reading. It is compact and portable, requiring no special apparatus and no external heating.

Clinitest Urine-sugar Analysis Set
No. 2155 UNIVERSAL MODEL

Plastic carrying case containing *Clinitest* Reagent Tablets (sealed in moisture-proof foil), test tube, dropper, instructions, analysis record and *Clinitest* Color Scale.

1. Desirable Weights for Men: Metropolitan Life Insurance Company. Pamphlet T5044, March 1951.
2. Look for Diabetes, Federal Security Agency, Public Health Service. Pamphlet GPO 83-34064.

CLINITEST

BRAND · REG. U. S. PAT. OFF.

to detect urine-sugar

AMES
COMPANY, INC., ELKHART, INDIANA

Ames Company of Canada, Ltd., Toronto

44452

Especially
for
"night cough" —

Syrup Sedulon® 'Roche'
although non-narcotic is
so effective that it can
often be used in place of
codeine.

A

non-narcotic

cough

sedative —

Syrup Sedulon 'Roche'

Dispense 240 cc

Sig: One teaspoonful

every two hours; one

tablespoonful at bedtime.

new convenient

ANDROGEN THERAPY

for women

ORETON-M Buccal Tablets containing methyltestosterone dissolved in POLYHYDROL,® a unique solid solvent, provide a more effective and convenient form of male sex hormone. The buccal route permits methyltestosterone to reach the circulation directly. Indicated for definitive relief of menopausal symptoms in special circumstances; for preventing pain of functional dysmenorrhea; and to relieve discomfort of breast engorgement.

Freedom from masculinizing side effects can be expected with recommended dosage of one-half to one and one-half 10 mg. ORETON-M® (Methyltestosterone U.S.P.) Buccal Tablets daily (5-15 mg.).

ORETON-M
buccal tablets

Schering CORPORATION • BLOOMFIELD, NEW JERSEY

ORETON-M Buccal Tablets

Eskacillin line—for use in the more severe infections:*

'Eskacillin 250-Sulfas'

palatable liquid penicillin plus *sulfonamides*

Each teaspoonful of 'Eskacillin 250-Sulfas' delivers 250,000 units of procaine penicillin G *plus* 0.5 Gm. (0.167 Gm. each) of 3 sulfonamides (sulfadiazine, sulfamerazine, sulfamethazine), thus permitting convenient t.i.d. dosage.

'Eskacillin 250-Sulfas' gives you 3 advantages over penicillin or the sulfonamides alone:

1. Wide antibacterial spectrum.
2. High antibacterial intensity.
3. Lessened chance of the development of resistant strains.

of the 'Eskacillin' line:

'Eskacillin 100-Sulfas'

100,000 units of penicillin and a total of 0.5 Gm. of 3 sulfonamides per teaspoonful

(All strengths of 'Eskacillin' are supplied in 2 fl. oz. bottles.)

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off.

new 2 *more potent members of the*

'Eskacillin 500'

palatable liquid penicillin

S.K.F. now offers 'Eskacillin' in a new, higher concentration: *one-half million units* of procaine penicillin G per teaspoonful.

'Eskacillin 500' gives you these advantages:

1. Greater effectiveness in the more severe infections.
2. The convenience of b.i.d. or t.i.d. dosage.
3. Unusual palatability—despite high potency.

Here are the other members

'Eskacillin 250'
250,000 units of penicillin per teaspoonful

'Eskacillin 100'
100,000 units of penicillin per teaspoonful

'Eskacillin 50'
50,000 units of penicillin per teaspoonful

moderation for variation..

in the blended diuretic regimen

In the long-term regimen, Calpurate meets the clinical need for moderate diuretic action, sustained effectiveness, and minimal toxicity. Calpurate also promotes increased cardiac output.

Calpurate is the chemical compound, theobromine calcium gluconate... unusually free from gastrointestinal and other side effects... does not contain the sodium ion.

to 'lighten the load' in congestive heart failure

Calpurate is particularly indicated:

when edema is mild and renal function adequate...

during rest periods from digitalis and mercurials...

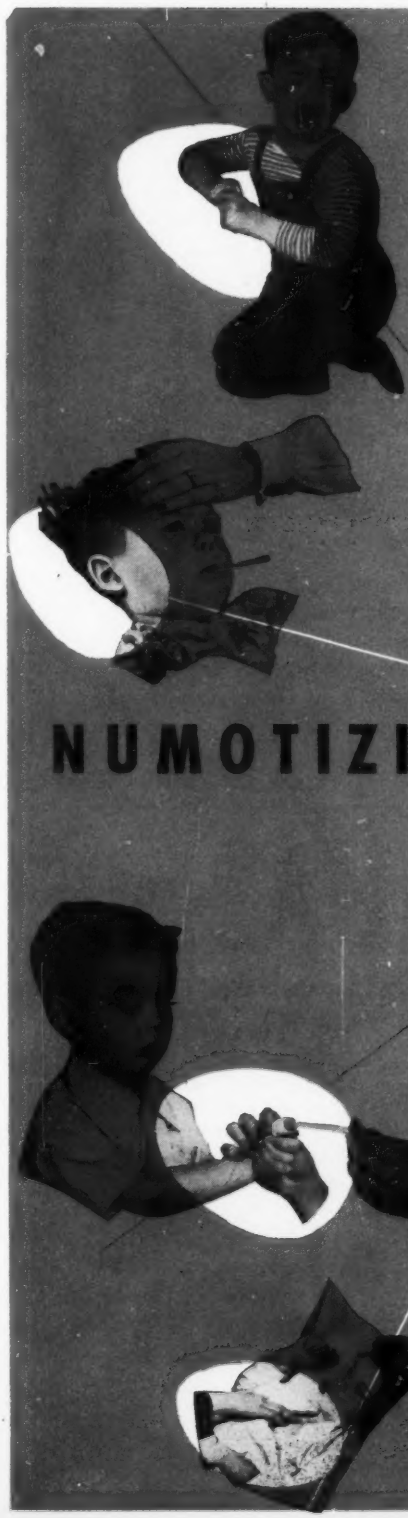
where mercury is contraindicated or sensitivity to its oral use is present...

for moderate, long-lasting diuresis in chronic cases.

Calpurate® ***the moderate, non-toxic diuretic***

MALTBIE LABORATORIES, INC. • NEWARK 1, N. J.

SUPPLIED: Calpurate Tablets of 500 mg. (7½ gr.)
Calpurate Powder
Calpurate with Phenobarbital Tablets—
16 mg. (¼ gr.) phenobarbital per tablet



Particularly in Pediatrics

—When Oral Medication is Difficult

Busy mothers welcome your prescription of Numotizine for the many and varied conditions to which the younger set is heir—such painful, sleep-interrupting conditions as—

Sore throat, Tonsillitis, Pharyngitis,
Inflammatory chest conditions,
Sprains, Strains, Boils, Contusions

NUMOTIZINE® *Prescription Cataplasm*

—provides relief for eight hours or longer on a single application—permitting the child to sleep throughout the night.

Employed adjunctively to the use of antibiotics and chemotherapeutic agents, Numotizine keeps the patient comfortable while the disease process is under attack.

Numotizine combines decongestive and analgesic actions—reduces swelling, relieves pain, increases local circulation. Easy to apply and remove.

Supplied: 4, 8, 15 and 30-oz. jars.

NUMOTIZINE, INC.

Chicago 10, Illinois

presenting the **HOBART** *line of finer pharmaceuticals*

tastes like **candy**

kids say it's **dandy**

new, **aqueous** vitamin syrup

Normally oil-soluble vitamins A and D in this potent multivitamin syrup are in aqueous form—for more rapid, more complete, and more assured absorption and utilization.

No bribe, no threat, no coaxing—because children love the delicious, candy-like flavor of new VI-AQUA SYRUP. They ask for it . . . take it right from the spoon . . . or can be mixed with milk, formula, juices, cereals, etc.

VI-AQUA syrup

AQUEOUS . . . for more certain absorption and better utilization

Each 5 cc. (approx. 1 teaspoonful) provides:

VITAMIN A*	4,000 U.S.P. Units
VITAMIN D*	800 U.S.P. Units
THIAMINE HCl (B_1)	1.5 mg.
RIBOFLAVIN (B_2)	1.2 mg.
NIACINAMIDE	10 mg.
PYRIDOXINE HCl (B_6)	0.3 mg.
PANTHENOL (pantothenic acid equiv.)	2 mg.
ASCORBIC ACID (C)	50 mg.

*Oil-soluble vitamin A and natural vitamin D made water-soluble with sorethytan esters; protected by U. S. Patent 2,417,299. Contains no alcohol.

Supplied in 4 oz., 16 oz. and gallon bottles.

Send for tasting samples.

U. S. VITAMIN CORPORATION
CASIMIR FUNK LABORATORIES, INC. (affiliate)
250 EAST 43rd ST., NEW YORK 17, N. Y.

Left: Multiple Neurogenic Tumors in the neck and around the larynx.

Center: Papillary Cystadenoma of the ovary.

Below: Metastatic Carcinoma of the spine.

Show it...

to associates and students, singly or in small groups

Much of the satisfaction of making photographs of significant cases comes from the fact that they help to explain and inform. Good photographs help the physician or the surgeon to demonstrate procedures, step by step . . . to do this as often as he wishes—weeks, months, years later.

Show it superlatively...

with Kodaslide Table Viewer, Model A

No need to dim lights or draw shades with this Kodaslide Table Viewer . . . it's designed for use in a fully lighted room. Handy and compact, it produces a large, brilliant image—almost 5 diameters' magnification. The color is full and rich with sparkling high lights. The convenient slide changer accepts 75 cardboard slides or 30 double-glass slides, projects and restacks them in order. Price, $97.50, subject to change without notice.

For further information, see your photographic dealer or write for booklet.

EASTMAN KODAK COMPANY
Medical Division, Rochester 4, N.Y.

Complete line of Kodak Photographic Products for the Medical Profession includes: cameras and projectors—still- and motion-picture; film—full color and black-and-white (including infrared); papers; processing chemicals; microfilming equipment and microfilm.

Serving medical progress through Photography and Radiography

Kodak

Thantis

LOZENGES

for throat irritation

'Thantis'® Lozenges, the original anesthetic-antiseptic throat lozenge, is more effective than any of the many imitations.

'Thantis' Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

'Merodicein'®, the long-lasting antiseptic, combats infection. Saligenin, the unique local anesthetic, relieves pain and irritation.

Twenty-two years' extensive clinical use has proved the value of this effective product.

'Thantis' is one of the few throat lozenges which have been submitted to extensive comparative clinical and laboratory study.*

Specify 'Thantis' Lozenges and be assured of satisfactory clinical response.

Supplied in vials of 12 lozenges each.

**References on request.* © *Reg. U. S. Pat. Off.*

HWD

HYNSON, WESTCOTT & DUNNING, INC.

BALTIMORE 1, MARYLAND

DR. ALPHONSE McMAHON

St. Louis, Missouri

President-Elect, Southern Medical Association, 1952-53

President, 1953-54

SOUTHERN MEDICAL JOURNAL
JOURNAL OF THE SOUTHERN MEDICAL ASSOCIATION
PUBLISHED MONTHLY BY THE SOUTHERN MEDICAL ASSOCIATION AT BIRMINGHAM, ALA.

Volume 46 JANUARY 1953 Number 1

PULMONARY INSUFFICIENCY IN THE NEWBORN*

By HELEN MORTON, M.D.
G. R. HENNIGAR, M.D.
and
LEE E. SUTTON, JR., M.D.
Richmond, Virginia

It has long been recognized that disease in childhood may clinically present itself in a manner far different from the typical manifestation of that disease in the adult, and hence the development of pediatrics as a specialty. Curiously enough, however, the recognition of the peculiar differences in the functional and structural changes of disease processes as found at autopsy in the infant, has lagged far behind their clinical recognition. Pediatric pathology, as applied to the infant, is not the adult picture of the disease cut down for size to fit the small child, but rather, is in most instances, the manifestation of a disease pattern peculiarly its own. Until the specific pathogenesis of each of these diseases of infancy is known, they will remain, as they now are, inadequately treated.

This paper is presented in the hope of adding to the small fund of knowledge already accumulated as to these differences in childhood pathology, and thereby is an indirect step toward proper therapy. The discussion is confined entirely to the singular differences in the patterns of pulmonic insufficiency in the infant during its first month of extra-uterine life. Our autopsy files reveal that as we better understand the picture of disease in the infant lung, over 50 per cent of our term birth and premature neonatal deaths result from specific lung disease, far exceeding the approximate 25 per cent death rate from congenital anomalies.

*Read in Section on Pediatrics, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

Two hundred cases of newborns, both premature and full term, dying of various pulmonary complications during the first month of life were gleaned from 1700 consecutive autopsies at the Medical College of Virginia Hospital from September, 1948, to August, 1952. A larger number of cases could easily have been reported, but only those cases have been included in which we felt that the disease process in the lung was the chief or sole cause of the infant's demise. Not less than 4 lung sections were studied in each instance. When alveolar membranes were considered, at least 3 to 5 membranes per low power field had to be present in all sections examined in order to incriminate this as the cause of death. The protocol of each of these infants was reviewed in an attempt to correlate the clinical picture with the specific pattern of pulmonic disease as found at autopsy.

A brief review of the concept of fetal respirations will aid in clarifying the pathogenesis of the diseased tissue pictures to be described. It is agreed that as the bronchial tree matures *in utero* its lumina are continuously bathed in amniotic fluid. At approximately the twenty-eighth week, or six and one-half month of intra-uterine life this development has reached the level of the respiratory ducts. At this critical age the alveoli are also beginning to form in the thick mesenchymal tissue rich in blood vessels and elastic fibers which separate these respiratory ducts. Potter [1] has convincingly shown that in the normal fetus, respiratory movements occur which are slow, shallow and intermittent in nature, resulting in a tidal flow of amniotic fluid as deep as the respiratory ducts. Though fluid may reach the alveoli, normally only a very few are expanded by it. When the fetus is denied sufficient oxygen via the placenta to maintain its normally relatively anaerobic metabolism, it will make deep, gasping respiratory movements sucking

the fluid medium deep into the immature alveoli *(Fig. 1)*.

Each of the chief causes of infant pulmonary insufficiency will be discussed separately. The first is:

PRIMARY OR FETAL ATELECTASIS

Potter,[1] who has pioneered in the field of infant pathology, defines atelectasis as the absence of alveolar expansion by air in the lung. There are two obvious reasons for this absence of expansion. In the primary type the alveoli have never expanded in the first place, whereas, in the secondary type, the alveoli, having once expanded by air breathing, have later collapsed.

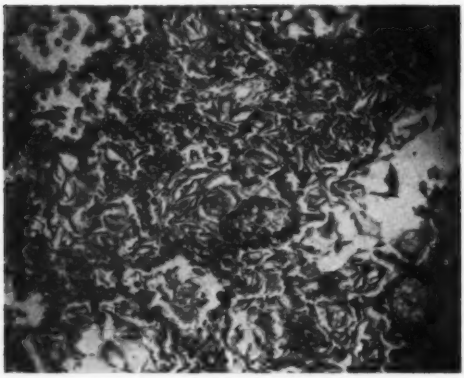


FIG. 1

Aspiration of amniotic fluid. Alveoli are filled with rolled-up epithelial cells, keratin strands, amorphous debris.

FIG. 2

Primary atelectasis. Large areas of inexpansion, most marked in the right lung.

The disease entity of primary atelectasis is most clearly typified by the immature infant in the 2 to 3 pound weight group who breathes poorly from the moment of birth with an unsatisfactory response to any type of resuscitation or stimulation and dies within a few hours. This is surely the result of the immature anatomical state of the respiratory tree plus the distorted, imperfect physiological respiratory processes. Grossly, the lungs appear to be airless masses with a beefy, red appearance *(Fig. 2)*. Microscopically, the majority of alveoli have never expanded, their elastic walls crumpling together the remaining potential air spaces *(Fig. 3)*. Out of the 200 cases of death from pulmonary insufficiency, 28 fitted into this group. It is impossible to tell these lungs grossly, radiologically, or histologically from the lungs of a stillborn, in spite of the fact that they may have air-breathed from one to twelve hours. This has obvious medicolegal implications.

In the 4 to 7 pound infant, primary atelectasis is rarely seen in the absence of concomitant abnormal structural or functional changes in the respiratory mechanism. Radiologically, these lungs are not aerated and the density of the lung markings to x-ray is so similar to the density of the heart that it is difficult always to outline that organ. Grossly, the lungs of this type of primary atelectasis are congested, sink in water, and curiously, only the periphery of the lungs have the pink color of the normal organ. Histologically, the atelectasis is marked, and there may be areas of compensatory expansion with torn

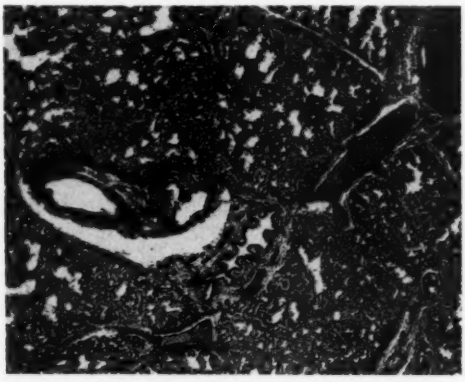


FIG. 3

Primary atelectasis. Absence of appreciable expansion is uniform.

alveoli, especially if resuscitation has been vigorous. There is no appreciable amount of amniotic fluid between the unexpanded alveolar walls. Under the pleura small blebs are not infrequently seen and on the autopsy table petechial hemorrhages are prominent over the serosal surfaces of the lungs *(Fig. 4)*, the pericardium, thymus, abdominal organs, and the brain. This we consider as morphologic evidence of the hypoxic syndrome of infancy. The mechanism of this type of primary atelectasis in these larger infants remains obscure. An older premature or rarely a term infant who breathes with difficulty from birth and dies within 24 hours typifies this syndrome. We found only four such cases in our series.

SECONDARY OR RESORPTION ATELECTASIS

Lungs which have collapsed following air expansion are in all instances the result of other lesions. The most common of these, and those to which we have confined our discussion, are moderate to marked subarachnoid hemorrhage, tentorial tears with resultant subdural hemorrhage, and bacterial meningitis. Although it is recognized that the primary underlying pathology is the intracranial disease, it was felt that it was necessary to study these atelectatic lungs in order to compare them with the atelectasis due to other causes. When intracranial hemorrhage is the cause of atelectasis, the premature or term infant will in most instances have a history of difficult labor and delivery. The length of life will depend upon how massive is the rent in the cerebrovascular system, being usually but a few hours. The mechanism generally accepted is that the intracranial lesion produces respiratory paralysis with resulting inefficient movements of the thoracic cage.

Grossly, secondary atelectasis is characteristically focal with purple areas of depression sharply demarcated from the surrounding pink, well aerated portions of the lung *(Fig. 5)*. In all cases of intracranial hemorrhage we found histologic evidence of alveolar hemorrhage in the areas of atelectasis *(Fig. 6)*. It appears probable that a neurovascular paralysis resulting from the central derangement is responsible for the dilatation of the alveolar capillaries and for the extravasation of red blood cells and edema fluid into the alveoli.

FIG. 4

Hypoxic effect. Pleural hemorrhages are evident.

FIG. 5

Secondary atelectasis. Multiple focal, depressed, dark areas are seen between lighter aerated portions of lung.

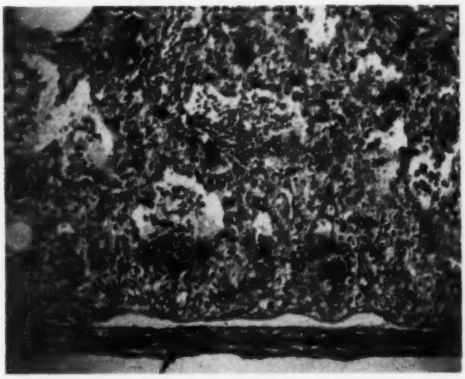


FIG. 6

Secondary atelectasis. Alveolar hemorrhages with adjacent areas of collapse.

A significant finding is the presence of large vesicles or "ballooned out" areas which we interpret as foci of entrapped air. In our experience this histologic finding is not present in the primary atelectatic group. Obviously, this group of infants could include any weight range, the lesion being dependent primarily upon the trauma received during parturition and partially to the immaturity of the structures involved. Our series numbered 78.

This study includes 20 cases of atelectasis secondary to bacterial meningitis. The disease picture is identical with that described as resulting from intracranial hemorrhage with the exception of the presence of infection both in the meninges and the lungs. Clinically, this type of pulmonary insufficiency is found in the premature or term infant who has done well for at least a week of life and then suddenly becomes listless, refuses to feed, diarrhea develops, and perhaps convulsions.

PULMONARY HYALINE MEMBRANES

Membrane formation in the alveoli has had a prominent place in recent pediatric literature as a cause of infant death. We do not propose to review what has been written, but only to add our findings to those already given. A recent study by Blystad[2] and coworkers clearly shows that the character of the amniotic fluid changes as the fetus ages. From the fourth calendar month of gestation the protein fraction is high. Meanwhile, the squamous cell count of the fluid remains very low until the eighth and ninth months when there is a sudden and precipitous rise in cells. One may then conclude that a premature infant born between the fifth and eighth calendar months of gestation, having experienced a hypoxic episode, would have aspirated fluid composed chiefly of protein with little or no cells and accompanying vernix caseosa. However, an older fetus at or near term, who had suffered at this time the same type of intra-uterine experience, would have aspirated fluid not only high in protein, but now also very high in vernix and squamous cells. It seems logical to infer that the membrane formed should appear differently under the microscope in each of these instances, and that their staining reactions should also differ.[5]

In our series in all but one, this condition occurred in the premature infant weighing on the average from 3 to 5½ pounds and with a gestation time estimated between 6 and 8 calendar months. Several of these infants had respiratory distress from birth, but the majority developed difficulty only after a few hours of air breathing. Under the microscope *(Fig. 7)* hyaline membranes lie tenaciously against the alveolar wall, and one is impressed with their eosinophilic, homogeneous, glassy appearance. The remaining alveolar lumina are usually filled with pink staining protein material and only in the rare term infant have we found vernix strands or squamous cells in any appreciable quantity. Bronchopneumonia, as evidenced by leukocytes in the alveoli, we rarely found to accompany this type of membrane. Thus far it has been our experience that these membranes do not stain for fat with Sudan dyes, as would be expected if they were composed of the fat-rich vernix. We had 72 cases which died because pulmonary hyaline membranes effectively barred the exchange of alveolar gases resulting in resorption atelectasis incompatible with life.

VERNIX PNEUMONIA WITH MEMBRANE FORMATION

Since vernix caseosa occurs in appreciable amounts only at or near term, it is fairly obvious that this type of pneumonia, often forming alveolar membranes, occurs chiefly in the more mature infant. In our series, complications at parturition sufficiently se-

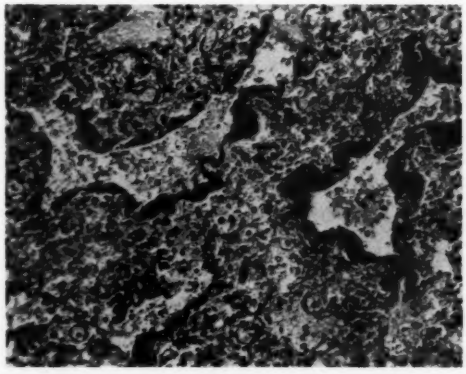


FIG. 7

Hyaline membranes. The membranes appear adherent to the alveolar walls. Light-staining protein precipitate occupies the alveolar lumens. Surrounding resorption atelectasis is seen.

vere to have reasonably caused quickened and deepened fetal respirations were frequent. Clinically, this condition may resemble true hyaline membrane formation in that there may be severe respiratory distress from the moment of birth, or the infant may appear in perfect health for several hours following delivery before signs of respiratory insufficiency develop. However, aside from the characteristic maturity of the infant, we believe that histologically it is possible to distinguish this disease entity from true hyaline membrane disease in several ways:

(1) On microscopic inspection the vernix masses clinging to the alveolar walls will reveal an eosinophilic but finely granular appearance in contrast to the homogeneous, glassy appearance of the true hyaline membrane *(Fig. 8)*.

(2) The remaining alveolar lumina contain squamous cells and vernix debris in relative abundance *(Fig. 8)*.

(3) Thus far it has been our experience that the vernix membrane stains readily for fat with Sudan dyes in contrast to its paucity in true hyaline membrane.

(4) A bacterial pneumonia appears to accompany this type of membrane in the majority of instances. In our series pneumonia was present in at least 90 per cent.

Both types of membranes were found in the lungs of two infants, but these were both term births. Vernix pneumonia accounted for six deaths in our total number of cases.

Realizing that a bacterial pneumonia nearly always accompanies the vernix membrane of the term infant, it seems tenable that the immediate institution of broad spectrum antibiotic therapy in suspected cases could effectively increase the air exchange by reducing the quantity of bacterial reaction in the alveolar spaces. This could be lifesaving.

ALVEOLAR DYSPLASIA

As a histologic entity of infant pulmonary disease, alveolar dysplasia[3] remains a highly controversial subject. We have two cases strongly suggestive of persistent pulmonary mesenchyme and with what appears to be greatly thickened alveolar septa *(Fig. 9)*. At present we are undertaking a study of all infant atelectatic lungs with reticulum, collagen, and elastin stains for comparison with the accepted picture on the routine hematoxylin and eosin stain. Clinically, a very characteristic picture prevails. The near term or term infant is cyanotic with difficult respiratory exchange from birth, yet lives from one to two weeks with no evidence of congenital heart disease and with no clearing of the cyanosis and then suddenly expires.

MONONUCLEAR PNEUMONIA

Within the first two years of life the condition known as mononuclear pneumonia, or interstitial pneumonitis, has more recently become recognized as a cause of death.[6] The majority of cases are seen around the age of one year, but approximately 5 per cent are

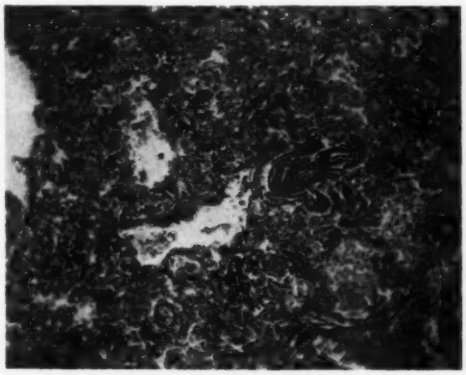


FIG. 8

Vernix pneumonia with membrane formation. Rolled-up vernix strands and poorly formed membrane masses occupy one portion of an alveolar duct. The surrounding lung is atelectatic.

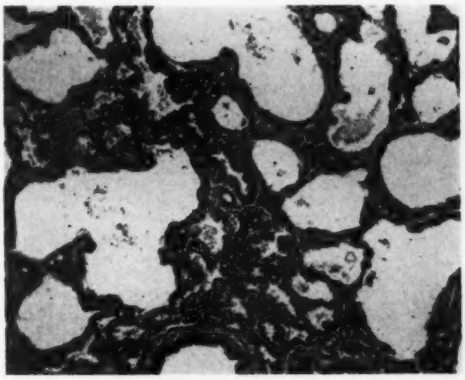


FIG. 9

Alveolar dysplasia. Alveolar ducts separated by thick septae, identical with immature lung. Full term.

recognized near the close of the neonatal period. During the past four years, 140 such cases have been identified on the combined services of the Chief Medical Examiner's office of the state of Virginia and the Department of Pathology at the Medical College of Virginia Hospital.

From the clinical viewpoint, this type of pneumonia is becoming well documented as a cause of sudden death or of a rapidly fatal illness in infancy. It has been a consistent finding that these infants are well nourished and well developed, giving a history only of mild to moderate coryza of from one to seven days duration. Frequently the family finds the infant dead in the crib or in a shock-like state with irregular respirations. Either on the way to the hospital, or on arrival, death frequently occurs. Obviously, this disease creates a dilemma for the pediatrician. By x-ray markedly increased bronchial and pulmonary markings are discovered. Many of the films are interpreted as "extremely marked pulmonary congestion and edema." Due to the rapid demise, there has been very little opportunity to study a large series of radiographs. However, at the present time, we are routinely x-raying the lungs of all infants who come to postmortem examination.

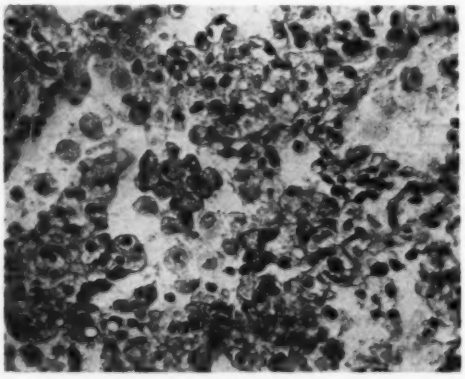


FIG. 10

Mononuclear pneumonia. Lymphocytes and large vacuolated mononuclear cells occupy the alveolar septae and lumens.

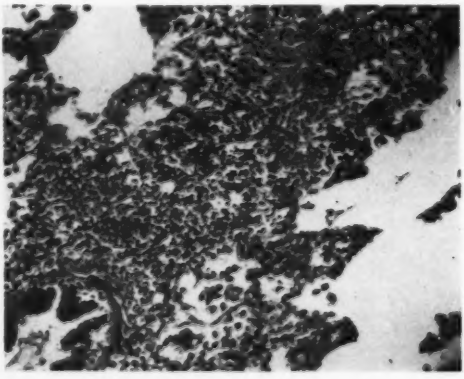


FIG. 11

Mononuclear pneumonia. Lymphocytes in the bronchial walls are abundant and radiate into the interstices.

At autopsy nothing is found except that the lungs show scattered red-purple areas of consolidation. These areas are not sharply demarcated from the surrounding pink aerated lung, and on standing in the air, the purple color becomes a bright red. The lungs appear edematous, but very little fluid escapes from the cut surface on squeezing. Petechial hemorrhages are not infrequently found beneath the pleura. Repeated attempts to isolate a virus[4] by biological tests have thus far failed. Because of the rapidity with which this type of infant pulmonary insufficiency arises and kills, no type of therapy has been of value.

Histologically, the widely scattered areas of involvement show edema, congestion of the alveolar capillaries, and not infrequently, hemorrhage into the alveoli. Mononuclear cells are prominent in the alveolar septa and may be seen within the alveoli *(Fig. 10)*. Occasionally, diffuse lymphocytic or eosinophilic infiltration of the bronchial walls is evident *(Fig. 11)*. An inconsistent finding has been peribronchial atelectasis. Occasionally, inclusion bodies have been seen in the cytoplasm of the mononuclear cells within the alveoli.

SUMMARY

In summary we wish to emphasize the following:

(1) The pattern of disease in the tissues of the infant is singularly different from that of the adult.

(2) Since these differences exist, specific and effective therapy cannot be instituted until the pathogenesis of each is well understood.

(3) As our knowledge of infant disease patterns continues to progress, the term "pre-

maturity" appearing alone on a death certificate may be a tacit admission of our own ignorance.

(4) In our experience, pulmonic insufficiency accounts for the majority of deaths in the neonatal period.

(5) Further investigation needs to be done on the pathological characterization of alveolar dysplasia.

(6) The condition of so-called mononuclear pneumonia in infancy has been described.

(7) Lastly, in our series of neonatal deaths from primary pulmonary insufficiency, primary atelectasis is the chief cause of death in the immature premature; in the larger premature it is hyaline membrane disease with atelectasis; while in the term infant vernix pneumonia holds first place.

It seems reasonable that in the term infant, presenting the clinical picture of vernix pneumonia, immediate use of the broad spectrum antibiotics may be lifesaving.

REFERENCES

1. Potter, Edith: Pathology of the Fetus and Newborn. Chicago: The Year Book Publishers, Inc., 1952.
2. Blystad, W.; Landing, B. H.; and Smith, C. A.: Pulmonary Hyaline Membranes in Newborn Infants. Pediatrics, **8**:5, 1951.
3. MacMahon, H. E.: Congenital Alveolar Dysplasia. Pediatrics, **2**:43, 1948.
4. Office of Chief Medical Examiner of Virginia, Richmond, Virginia.
5. Anderson, George: Personal communication.
6. Werne, Jacob: Post Mortem Evidence of Acute Infection in Unexpected Death in Infancy. Amer. J. Path., **18**:759, 1942.

DISCUSSION *(Abstract)*

Dr. Samuel F. Ravenel, Greensboro, N.C.—The superb studies of the authors of this very fine paper demonstrate graphically what kills our newborn babies. It is necessary to recall that 79,000 infants die in the neonatal period each year in the United States. Of these, 28,000 die from pulmonary hyaline membrane formation, pneumonia, and aspiration of amniotic fluid.

Experiments of Miller[1] and of Ravenel[2] suggest that neonatal deaths from pneumonia, aspiration of amniotic fluid or milk, and atelectasis may be largely obviated by humidification with "alevaire." The researches of Caulfield[3] offer hope that the conquest of pulmonary hyaline membrane may soon be achieved. Some of us now feel that if all babies born (a) prematurely, (b) by cesarean section or (c) after obstetrical complications predisposing to respiratory difficulty, are treated with "alevaire," penicillin and streptomycin for several days, a majority of these fatalities may be prevented.

1. Miller, Joseph B.: To be published.
2. Ravenel, Samuel F.: To be published.
3. Caulfield, James B.: To be published.

RECENT DEVELOPMENTS AND FUTURE TRENDS IN THE FIELD OF ORTHOPEDIC APPLIANCES*

By RUFUS H. ALLDREDGE, M.D.
New Orleans, Louisiana

More progress has been made in the field of orthopedic appliances during the past ten years than has been made in any comparable period in modern times. It seems to me that orthopedic appliances are so important to orthopedic surgery that some of the highlights of the story of research and development in this important orthopedic field during the past decade should be reviewed. For many reasons, progress in the orthopedic appliances field had not kept up with the general progress made in engineering and mechanics and even in orthopedic surgery during the past thirty or forty years.

The reason for this presentation is to review the highlights of the unprecedented amount of progress that has been made during the past ten years. Some progress would have been made by natural processes but much has been accomplished as a result of research and development work, especially on artificial limbs for substitution of the upper and lower extremity. Some of this work has had marked influences on the future course of teaching, research and practice in orthopedic surgery.

Early in World War II, the maimed and mutilated soldiers returning to amputation centers from all of the war fronts inspired the interest of doctors and laymen alike in their handicaps. Designation of special orthopedic and amputation centers in the Armed Forces Hospitals served to segregate the orthopedic war wounded, especially amputation cases, in organized centers where they could be better cared for. This was the most important single step taken and resulted not only in the accumulation of thousands of amputees in a few centers where their problems could be given special attention, but it also served to organize all possible service and attention for them so that they could be given better care and their special problems could be individually handled.

From a medical standpoint, it was soon

*Chairman's Address, Section on Orthopedic and Traumatic Surgery, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

obvious that much progress had been made in the surgery, the pre- and postoperative care, the fitting of artificial limbs and in the training of the amputees in the use of them.

At the same time, it also became obvious that artificial appliances were not good enough and that progress in this field had not been generally in keeping with the standards of progress made in engineering and mechanics in general up to that time. The orthopedic surgeons in charge of the centers, as well as mechanics, engineers and the patients themselves, realized this.

To make matters worse, there was a shortage of limb fitting technicians in the amputation centers in those days, not enough limbs and materials were available to meet the needs of the amputees, and the finished job was not good enough. Realizing this, the Surgeon General of the Army, Gen. Norman T. Kirk, himself an eminent orthopedic surgeon, requested the panel on amputations and artificial limbs of the National Research Council to do what it could to assist in relieving the confusion and inadequate general situation of upper and lower extremity prosthesis. The Panel on Amputations of the National Research Council, headed by Dr. Philip D. Wilson, with the support of Dr. George E. Bennett, Chairman of the Orthopedic Section of the National Research Council, held a meeting of all interested parties, including various artificial limb makers, in Chicago in January, 1945. The author was privileged to be present at that first meeting and has had the opportunity of following closely all of the developments that have taken place since then. Following the first meeting in Chicago in January, 1945, it was obvious that there was such a state of confusion and disagreement on the part of everyone that nothing could be accomplished until a definite research program was set up. Through the efforts of this original group of men, the Committee on Prosthetic Devices of The National Research Council was appointed, with Dr. Paul E. Klopsteg, a physicist of Northwestern University, as chairman. The committee was composed of a group of orthopedic surgeons, engineers and physicists. Their activities have continued since that time in one way or another and later the name of the committee was changed to the Committee on Artificial Limbs and still later to the Advisory Committee on Artificial Limbs. Under the direction of this committee, the most extensive research program in history has been carried out in various institutions and universities throughout the country. The Armed Forces have assisted and cooperated with the program throughout, as well as has the Veterans' Administration. At first, the work of the committee consisted of basic research contracts with institutions of various types but later the work was extended to practical application.

In 1946, the Committee on Artificial Limbs, with the cooperation of the War Department, and the Surgeon General of the Army, sent a commission of orthopedic surgeons, engineers and physicists to Europe to investigate recent developments in the various European countries and Great Britain. The results of the European visit by this commission stimulated interest in certain prosthetic appliances, particularly the suction socket prosthesis for above the knee amputations and the cineplastic method for upper extremity amputations. These two developments have been extended and improved so that today they stand among the most important of the practical applications of the rereach work to the amputee.

The Committee on Artificial Limbs began to work with the limb manufacturers of the country, after the European commission report, on the suction socket prosthesis. Following that, after the suction socket was successfully developed and applied to amputees throughout the country, the individual members and leaders of the limb making industry have continually cooperated and worked with the Committee on Artificial Limbs in many phases of research and development in orthopedic appliances.

During the remainder of World War II, great progress was made in the various amputation centers, especially in improving the indications for surgery, surgical technic and in re-introducing more conservatism into amputation surgery. There were various changes in the indications for the level for amputations which were re-established during the war. Nearly all of these re-established older indications for lower amputation levels, such as amputation at the wrist instead of the lower third of the forearm, and at the ankle instead of the upper third of the leg. Con-

siderable progress was also made in exercising more conservatism in the management of partial amputations of the hand and foot.

There were also great advances made in the amputation centers of the Armed Forces in fitting methods and technics in the application and use of new and different materials in the prosthesis. The use of modern plastics, for instance, was introduced into the amputation centers of the Armed Forces for the first time. There were many other improvements and advances.

The training of the amputee in the use of the prosthesis was extended in the amputation centers to a point unheard of previously. This greatly benefited the amputee in the use of his prothesis and in his over-all rehabilitation.

By the end of the war, medical and surgical care of the amputee, with all pre- and postoperative measures in use at that time, together with training and rehabilitation and even re-education of the amputee for types of work indicated, had far outrun the developments and technics in the application of artificial limbs and orthopedic appliances. The research program which had been begun in the Army Amputation Centers and the work of the Committee on Artificial Limbs of the National Research Council was gradually transferred to the Veterans Administration. A very important part of the work was also continued in the remaining Armed Forces hospitals of the Army and Navy.

After the war, the work of the Committee on Artificial Limbs was continued with the cooperation of all of those who had previously been interested and still others who had

FIG. 1 A

Suction socket prosthesis for amputation above the knee.

FIG. 1 B

Suction socket prosthesis fitted without any other support.

not been in the work before. The work had been extended to civilian people, agencies and institutions of all kinds. Rehabilitation agencies and institutions in all parts of the country became actively interested in the work and many of them cooperated in carrying out important phases of it. A tremendous interest in improving not only prostheses but orthopedic appliances of all kinds developed everywhere and great attention was focused on braces as well as prostheses. The fundamental researches carried on by the contractors of the Committee on Artificial Limbs were used for basic approaches to the orthopedic appliances by doctors, engineers and limb makers throughout the country. The extension of the interest in orthopedic appliances was evidenced on every hand. The American Academy of Orthopedic Surgeons appointed a committee for the further study of braces and prostheses and there was a reorganization of the limb and brace makers association. A definite scientific program of that organization was held at its annual meetings. The Veterans Administration set up regional office clinics where all veterans wearing orthopedic appliances were cared for under the direction of an orthopedic consultant who was interested in and had experience in amputations, artificial limbs and orthopedic appliances. The Veterans Administration also, at that time, began the suction socket prostheses schools where many orthopedic surgeons and limb fitters were educated and trained in the application and use of the highly specialized suction socket prostheses. One of the most important advances was the formation of the American Board for certification of the limb and brace making industry. This occurred in 1947. It has already resulted in great benefits to the limb and brace making industry and to the handicapped patient, and will probably eventually prove to be the most important step the limb and brace making industry has ever taken.

The work of the Army Prosthetics Research Laboratory at the Army Medical Center has been most outstanding, particularly

FIG. 2 A

The cineplastic muscle motor in the pectoral muscle for short arm stumps.

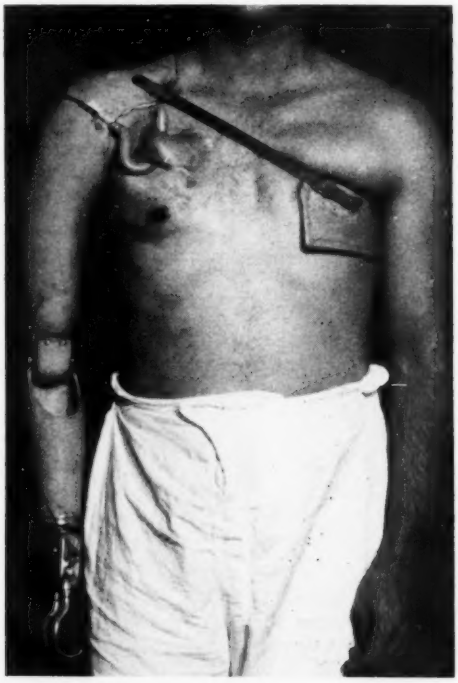


FIG. 2 B

The cineplastic prosthesis for pectoral muscle motor for short arm stump.

in the development of a cineplastic prosthesis and of a hand and hook for artificial limbs. This developmental work applied to the cineplastic amputees at the Walter Reed General Hospital has been one of the outstanding developments of the research work.

In 1946, after the Committee for the Study of Braces and Prostheses of the Academy was appointed, the committee began work on a two-volume atlas on orthopedic appliances and prostheses and the first volume on orthopedic appliances was published in January of 1952. The second volume on prostheses is still in the process of compilation. The limb and brace makers association has had many meetings and has published a journal of great value to those interested in the practical application of orthopedic appliances. Recently, the Council on Physical Medicine and Rehabilitation of the American Medical Association has published a special article giving the important details of the organization of the American Board for Certification for Prosthetic and Orthopedic Appliances Industry, Inc., and reference is made to that article[1] for details of that program.

All of the changes and improvements in orthopedic appliances which have resulted in the past ten years, have had a definite influence on the surgery of orthopedic conditions, especially on amputations. The changes in technics in the surgery and levels and sites of amputations are a challenge to the orthopedic surgeon who must meet these as well as many other continuing changes in surgery. There is increasing danger that there may continue to be a marked tendency for the development of sub-specialties in orthopedics to meet the demands of the situation in this field.

In view of all of the educational and research work which has been carried on in the past ten years and the results thereof, the orthopedic surgeon finds himself in an atmosphere of highly technical precision details concerning all phases of orthopedic appliances. The prescription of the brace and prosthesis for the handicapped patient has become a highly technical matter. Familiarity with engineering principles and with the chemistry and engineering properties of all of the materials, including the newer plastics used in orthopedic appliances becomes essential. The orthopedic team, consisting of the orthopedic surgeon, the brace or prosthetic maker (the orthotist and prosthetist) and the physiotherapist and possibly in some cases the engineer, are the ideal combination for the solution to the problem of designing, prescribing, applying and training the patient in the use of the orthopedic appliance.

Many orthopedic surgeons of the country have already attended various institutes, schools and meetings of various kinds where orthopedic appliances have been the subject of consideration. Others, to keep abreast of modern developments, will have to do the same. The orthotist and the prosthetist have elevated their professional standing and ability so that they are better able to cope with their problems today than ever before.

The research work of the Committee on Artificial Limbs, the Veterans Administration, the Armed Forces and other institutions and agencies will continue indefinitely and show no signs, as yet, of weakening. It may be expected that the next ten years will bring even more improvements in the development of highly technical appliances from the material and engineering standpoints, so that the orthopedic physician must keep abreast of modern developments in all possible ways.

This research and development work has already made itself felt everywhere by everyone concerned, not only in this country but abroad. In order for the medical profession, particularly the orthopedic specialty, to take full advantage of these recent developments for the benefit of the handicapped patient, we shall have to institute some long needed changes with particular regard to practice and teaching. More attention will be required to the problem of teaching graduates and undergraduates the basic fundamentals of orthopedic appliances. The subject should be introduced to the medical student and definitely incorporated into the curriculum of the training program of the residency training period of orthopedic residents. Orthopedic surgeons themselves will have to be continually on the alert for all possible means to keep abreast of all the changes and improvements made from time to time in the orthopedic appliances field.

REFERENCE

1. Certification Program Adopted by Prosthetic and Orthopedic Appliance Industry. J.A.M.A., 149:147 (May 10) 1952.

not been in the work before. The work had been extended to civilian people, agencies and institutions of all kinds. Rehabilitation agencies and institutions in all parts of the country became actively interested in the work and many of them cooperated in carrying out important phases of it. A tremendous interest in improving not only prostheses but orthopedic appliances of all kinds developed everywhere and great attention was focused on braces as well as prostheses. The fundamental researches carried on by the contractors of the Committee on Artificial Limbs were used for basic approaches to the orthopedic appliances by doctors, engineers and limb makers throughout the country. The extension of the interest in orthopedic appliances was evidenced on every hand. The American Academy of Orthopedic Surgeons appointed a committee for the further study of braces and prostheses and there was a reorganization of the limb and brace makers association. A definite scientific program of that organization was held at its annual meetings. The Veterans Administration set up regional office clinics where all veterans wearing orthopedic appliances were cared for under the direction of an orthopedic consultant who was interested in and had experience in amputations, artificial limbs and orthopedic appliances. The Veterans Administration also, at that time, began the suction socket prostheses schools where many orthopedic surgeons and limb fitters were educated and trained in the application and use of the highly specialized suction socket prostheses. One of the most important advances was the formation of the American Board for certification of the limb and brace making industry. This occurred in 1947. It has already resulted in great benefits to the limb and brace making industry and to the handicapped patient, and will probably eventually prove to be the most important step the limb and brace making industry has ever taken.

The work of the Army Prosthetics Research Laboratory at the Army Medical Center has been most outstanding, particularly

FIG. 2 A

The cineplastic muscle motor in the pectoral muscle for short arm stumps.

FIG. 2 B

The cineplastic prosthesis for pectoral muscle motor for short arm stump.

in the development of a cineplastic prosthesis and of a hand and hook for artificial limbs. This developmental work applied to the cineplastic amputees at the Walter Reed General Hospital has been one of the outstanding developments of the research work.

In 1946, after the Committee for the Study of Braces and Prostheses of the Academy was appointed, the committee began work on a two-volume atlas on orthopedic appliances and prostheses and the first volume on orthopedic appliances was published in January of 1952. The second volume on prostheses is still in the process of compilation. The limb and brace makers association has had many meetings and has published a journal of great value to those interested in the practical application of orthopedic appliances. Recently, the Council on Physical Medicine and Rehabilitation of the American Medical Association has published a special article giving the important details of the organization of the American Board for Certification for Prosthetic and Orthopedic Appliances Industry, Inc., and reference is made to that article[1] for details of that program.

All of the changes and improvements in orthopedic appliances which have resulted in the past ten years, have had a definite influence on the surgery of orthopedic conditions, especially on amputations. The changes in technics in the surgery and levels and sites of amputations are a challenge to the orthopedic surgeon who must meet these as well as many other continuing changes in surgery. There is increasing danger that there may continue to be a marked tendency for the development of sub-specialties in orthopedics to meet the demands of the situation in this field.

In view of all of the educational and research work which has been carried on in the past ten years and the results thereof, the orthopedic surgeon finds himself in an atmosphere of highly technical precision details concerning all phases of orthopedic appliances. The prescription of the brace and prosthesis for the handicapped patient has become a highly technical matter. Familiarity with engineering principles and with the chemistry and engineering properties of all of the materials, including the newer plastics used in orthopedic appliances becomes essential. The orthopedic team, consisting of the orthopedic surgeon, the brace or prosthetic maker (the orthotist and prosthetist) and the physiotherapist and possibly in some cases the engineer, are the ideal combination for the solution to the problem of designing, prescribing, applying and training the patient in the use of the orthopedic appliance.

Many orthopedic surgeons of the country have already attended various institutes, schools and meetings of various kinds where orthopedic appliances have been the subject of consideration. Others, to keep abreast of modern developments, will have to do the same. The orthotist and the prosthetist have elevated their professional standing and ability so that they are better able to cope with their problems today than ever before.

The research work of the Committee on Artificial Limbs, the Veterans Administration, the Armed Forces and other institutions and agencies will continue indefinitely and show no signs, as yet, of weakening. It may be expected that the next ten years will bring even more improvements in the development of highly technical appliances from the material and engineering standpoints, so that the orthopedic physician must keep abreast of modern developments in all possible ways.

This research and development work has already made itself felt everywhere by everyone concerned, not only in this country but abroad. In order for the medical profession, particularly the orthopedic specialty, to take full advantage of these recent developments for the benefit of the handicapped patient, we shall have to institute some long needed changes with particular regard to practice and teaching. More attention will be required to the problem of teaching graduates and undergraduates the basic fundamentals of orthopedic appliances. The subject should be introduced to the medical student and definitely incorporated into the curriculum of the training program of the residency training period of orthopedic residents. Orthopedic surgeons themselves will have to be continually on the alert for all possible means to keep abreast of all the changes and improvements made from time to time in the orthopedic appliances field.

REFERENCE

1. Certification Program Adopted by Prosthetic and Orthopedic Appliance Industry. J.A.M.A., 149:147 (May 10) 1952.

BRONCHOGENIC CARCINOMA*

By J. D. TRADER, M.D.
and
E. T. ODOM, M.D.
Tuskegee, Alabama

During the years 1949-50 ten cases of bronchogenic carcinoma were admitted to this hospital. All of these patients were beyond hope for surgical care upon admission. The high degree of morbidity and mortality that was observed in these can be attributed to the lack of early diagnosis. The medical literature, lecturers and the American Cancer Society constantly stress the need for early cancer detection to both physicians and laymen. Although bronchogenic carcinoma is frequently very difficult to detect in a curable stage, we must continue to exert our efforts in that direction. The patient is responsible for part of the delay in diagnosis if he fails to see a physician early. The physician is responsible when he fails to become suspicious of bronchogenic carcinoma early in patients with chest diseases. All patients in this small series had been seen by a physician prior to hospitalization, yet only two had tentative admission diagnoses of bronchogenic carcinoma.

Incidence.—The incidence of bronchogenic carcinoma is either increasing or the disease is being diagnosed more frequently. According to Johnson and Reinhardt,[1] the incidence of pulmonary carcinoma determined at autopsy increased from 0.54 per cent of autopsies performed from 1932 to 1937 to 0.92 per cent from 1937 to 1942. The incidence of bronchogenic carcinoma in necropsies performed at Charity Hospital in New Orleans increased five times in seven years as reported by Alton Ochsner, Leonnard Dixon and Michael Debakey.[2] Dorn[3] found that between 1914 and 1930 the death rate from cancer of the lungs in the United States increased 3.7 times as contrasted with an increase of only 20 per cent of all forms of cancer combined. W. Boyd[4] expresses the opinion that the increase of cancer of the lungs is more apparent than real. Costello and O'Brien[5] estimated that primary bronchogenic carcinoma causes 15,000 deaths annually in the United States. These authors feel that the increase is absolute and not relative. In this small series ten cases were diagnosed out of 7,057 routine admissions, giving an incidence of 0.14 per cent. The incidence in this small number of patients is not considered to be too significant.

Etiology.—No definite etiology has been established for cancer of the lungs. Chemical irritants, acute and chronic inflammatory pulmonary diseases, gasoline fumes, certain types of pneumoconiosis, inhalation of tobacco smoke, and so on, have all been suspected as possible existing causes. The definite relationship of these and other factors in the pathogenesis of cancer of the lungs has not been definitely established. If some definite existing causes could be determined for bronchogenic carcinoma, prophylaxis might be possible in certain patients.

Age and Sex Incidence.—The patients in this series were all Negro males. Two cases occurred between the ages of 30-40, one between the ages of 40-50 and seven between the ages of 50-60. Although Wasch, Lederer and Epstein[6] reported an unusual case of bronchogenic carcinoma in an 11-year-old boy with a duration of seven years, the disease is infrequently seen between the ages of 20-30 and is rare below the age of 20. It is a well known fact that bronchogenic carcinoma develops more frequently in males than females.

Subjective Symptoms.—The symptoms elicited when the admission histories were written on these ten cases are listed in *Table 1.*

It can be seen from *Table 1* that cough, weight loss, chest pain, dyspnea and weakness had occurred in 50 per cent or more of the patients upon admission. Other symptoms

	Symptoms	Number of Cases
1	Cough	10
2	Weight loss	9
3	Chest pain	5
4	Dyspnea	5
5	Weakness	5
6	Hemoptysis	3
7	Anorexia	2
8	Wheezing	1
9	Dysphagia	1
10	Substernal discomfort	1
11	Hoarseness	1

TABLE 1

*Received for publication July 30, 1952.

*From the Department of Internal Medicine, Veterans Administration Hospital, Tuskegee, Alabama.

*Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own studies and do not necessarily reflect the opinion or policy of the Veterans Administration.

as listed had occurred in less than 50 per cent of the patients upon admission. Any or all of the symptoms listed could have occurred in many more common pulmonary conditions. This we believe is one of the pitfalls in the early diagnosis of bronchogenic carcinoma. Pneumonias, tuberculosis, pyogenic lung abscesses, heart disease, and other conditions occur so frequently that we are prone to forget primary carcinoma of the lungs. The nonspecificity of the symptoms in cancer of the lungs can hardly be overemphasized. If we are to salvage more of these patients, we must become more "bronchogenic carcinoma conscious," particularly when any combination of the previously listed eleven symptoms occurs in adult males. Even when there is definite evidence of inflammatory lung disease, bronchogenic carcinoma may be present as a serious complication.

Physical Findings.—The physical findings upon initial examination were variable to say the least. Upon inspection, diminished chest expansion on the affected side was detected in only two patients. Palpation revealed absent fremitus in only one patient who had a massive left sided pleural effusion. It was not appreciably abnormal in the other nine cases. Percussion was interpreted as abnormal over the affected side in three cases. Auscultation revealed decreased breath sounds over the affected side in two patients. Breath sounds were completely absent in the patient with the massive pleural effusion. The physical findings naturally changed from time to time as the disease progressed. It must be remembered, however, that all cases were beyond the stage of surgical cure regardless of the paucity of subjective symptoms and physical signs found on admission.

X-ray Findings.—The x-ray findings in nine cases were considered to be abnormal by the roentgenologist and indicative of intrinsic pulmonary disease. This emphasizes the importance of chest x-rays in the diagnosis of bronchogenic carcinoma. Eight of the nine patients with x-ray evidence of intrinsic pulmonary disease showed variable areas of increased density in the lung fields. A patient showed a massive left sided pleural effusion with mediastinal shift to the right. The tenth patient showed cardiac hypertrophy and dilatation with congestive changes that obscured a bronchogenic carcinoma upon admission. Bronchogenic carcinoma was considered in the differential diagnosis by the roentgenologist in all patients except the last one. X-ray is most important in the diagnosis of bronchogenic carcinoma with or without metastases.

Figure 1 shows the initial x-ray film of W. G., age 57, who had a bilateral increase of the hilar shadows more marked on the

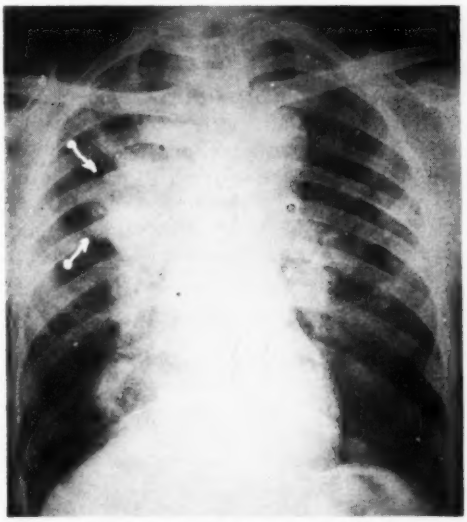


FIG. 1

X-ray film of the chest of W. G., age 57. There is bilateral increase in hilar shadows with an area of increased density in the region of the main bronchus to right upper lobe. Arrows point to the largest area of increased density.

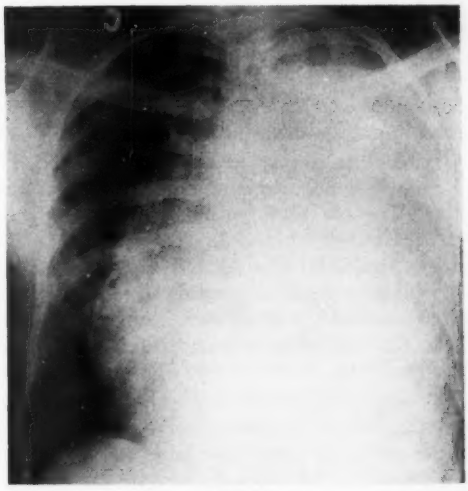


FIG. 2

X-ray film of F. C., age 55, with massive hemorrhagic pleural effusion on the left and mediastinal shift to the right.

right. Biopsy of a lymph node from the neck revealed metastatic squamous carcinoma from the lungs.

Figure 2 shows an x-ray film of F. C., age 55, illustrating a massive left sided pleural effusion with mediastinal shift to the right. Thoracentesis in this patient revealed a massive hemorrhagic effusion. Paraffin cell block studies of the hemorrhagic fluid revealed malignant cells.

Bronchoscopic Findings. — Bronchoscopy was performed in five of the ten patients. The diagnosis of bronchogenic carcinoma was established in four of the five bronchoscoped patients. Two diagnoses were established from paraffin cell block studies, one from Papanicolaou's stain and the fourth by bronchoscopic biopsy. In the five cases not bronchoscoped, the diagnosis was established in two instances from biopsied enlarged neck lymph nodes, one from the microscopic examination of coughed up hemorrhagic lung tissue, one from paraffin cell block studies and the fifth by exploratory thoracotomy.

Pathology.—Pathologically, Bell[7] classifies bronchogenic carcinoma as follows: (1) Squamous cell type; (2) Adenocarcinoma; and (3) Oat cell or undifferentiated type.

Carcinoma of the lungs arises, he says, only from some part of the bronchi and not from the alveoli. He uses the term "bronchiogenic" to indicate the origin of pulmonary carcinoma.

The diagnosis made in these ten cases by the pathologist are as follows: (1) Oat cell type, 5 cases; (2) Unclassified, 3 cases; (3) Squamous cell type, 2 cases; and (4) Adenocarcinoma, no cases.

It was interesting to note that no definite diagnosis of adenocarcinoma was made in any case. The oat cell type constituted 50 per cent of the cases in this series. Only one superior sulcus tumor was found and it was extremely large upon admission and situated in the right apex. In spite of the size of this tumor, Horner's syndrome was not observed prior to the patient's death

Complications.—Metastases, as would be expected, constituted the main complication in these patients. Metastases were demonstrated by lymph node biopsy, x-ray or autopsy in six cases. Only two patients were autopsied but since all patients in this series died, it is reasonable to assume they had metastases. Other complications such as anemia, infection, mediastinal shift, and hemoptysis occurred in variable degrees before the patients' demise.

Prognosis.—The prognosis of bronchogenic carcinoma in general is poor. All ten patients in this series died. The longest survival time after an established diagnosis was two years. The shortest survival time after an established diagnosis was two weeks. The average duration in months for the entire series was 4.17. It would appear from this small series as well as from larger ones that bronchogenic carcinoma is usually beyond the curable stage when a diagnosis is established. In this respect it is similar to some other types of carcinoma such as carcinoma of the stomach and prostate.

SUMMARY AND CONCLUSION

The problem of bronchogenic carcinoma has been discussed and some observations in ten proven cases are included in this discussion. The high morbidity and mortality that accompany the late diagnosis of this disease are well illustrated in this small series of cases and vividly point out the need for early diagnosis. The non-specificity of subjective symptoms and physical findings in these patients has been emphasized and is a very important point to remember. The important roles that can be played by x-ray, bronchoscopy with biopsy when indicated, Papanicolaou's stain and paraffin cell block studies of tracheobronchial secretions, and lymph node biopsy when necessary should be remembered and utilized early. Exploratory thoracotomy, as recommended by thoracic surgeons, must be resorted to in some cases, but it played no significant role in this series.

REFERENCES

1. Johnson, E. K. and Reinhardt, H. L.: Necropsy Incidence of Carcinoma of the Lung. Ohio State Med. J. 39:1017, 1943.
2. Ochsner, A.: Dixon, J. L.: and Debakey, M.: Primary Bronchogenic Carcinoma. Diseases of the Chest, 11:97-129 (March-April), 1945.
3. Dorn, H. F.: Incidence and Prevalence of Cancer of Lung. Public Health Report, 58:1265-1271 (Aug. 20), 1943.
4. Boyd, W.: Reasons for Recent Increase of Bronchogenic Carcinoma. Western J. Surg. 52:330-334 (Aug.) 1944.
5. Costello, J. N.: and O'Brien, W. B.: Primary Bronchogenic Carcinoma. Rhode Island Med. J. 30:15-20 (Jan.) 1947.
6. Wasch, M. G.: Lederer, M.: and Epstein, B. S.: Bronchogenic Carcinoma of 7 Years' Duration in Eleven Year Old Boy. J. Pediatrics, 17:521-528 (Oct.) 1940.
7. Bell, E. T.: A Textbook of Pathology. Philadelphia: Lea and Febiger, 1947.

BETTER TONSILLECTOMIES AND ADENOIDECTOMIES: FEWER POSTOPERATIVE HEMORRHAGES*

By EDLEY H. JONES, M.D., F.A.C.S.
Vicksburg, Mississippi

The renewed interest of otolaryngologists in tonsillectomy and adenoidectomy is a healthy sign, for it is a basic interest of our profession. The author[1] has discussed phases of this subject on two previous occasions during the past six years, and this presentation is in the nature of a continued report and discussion.

Possibly because it is the most frequently performed operation (in this country) it is not always accorded the serious consideration it obviously deserves. Belton and Leigh[2] report that between 1922 and 1931, 15 per cent of all the deaths due to anesthesia in the United States were in adeno-tonsillectomy. Harlowe[3] in 1948 published a most impressive report on the complications following tonsillectomy, reviewing a total of 117 papers published between 1910 and 1947, listing an amazing variety of complications and a shocking number of deaths.

It must be remembered that this procedure is often performed by surgeons who have not restricted their practice and perhaps the most important point that could be made in this presentation is the rather trite one of emphasizing the importance of proper training. When a medical student graduates as a doctor of medicine and is licensed to practice, he more or less has *carte blanche* and thereafter is regulated and influenced only by hospital staff regulations, his patients and his own sense of responsibility. Established surgical procedures should be performed only by surgeons who have had adequate training.

PREOPERATIVE CONSIDERATIONS

The selection of the patient is of primary importance and the author concurs in the frequently expressed opinion that many tonsillectomies are unnecessary. Mere hypertrophy of the tonsils, or the patient's (or parents') desire to have the tonsils removed, is not sufficient justification. It should be remembered that while perfect tonsillectomy will prevent subsequent attacks of tonsillitis it will not necessarily prevent subsequent attacks of nasopharyngitis and pharyngitis. It should be stressed that non-emergency surgery should never be performed on any allergic patient unless the allergic condition is under control; and it must also be understood that tonsillectomy and adenoidectomy can have no specific beneficial effect on allergic conditions, only the general beneficial effect that would follow the removal of any source of toxemia. Further, tonsillectomy is rarely an emergency procedure, and should not be performed during any epidemic, such as influenza, virus respiratory infections and anterior poliomyelitis.

TONSILLECTOMY

In 1946, the author reviewed the literature and discussed the technic of tonsillectomy quite fully. Since that time only one interesting paper has been noted in the literature: Emerson[4] has described a technic of "closed fossa tonsillectomy" designed to prevent postoperative hemorrhage and to accelerate wound healing. He reports a series of 634 cases and says that "except in the case of accidents, no hemorrhage should occur." In this entire series he reports only two cases of hemorrhage from accident and further states "with the tonsil wound closed, no hemorrhage resulted." His technic is a variation of the procedure suggested many years ago, suturing the pillars together. The author tried the original procedure and found it unsatisfactory. Fox[12] tried packing an absorbable sponge into the fossae and suturing the pillars over them. He says: "The results were uniformly discouraging due to the marked postoperative pain, so that the procedure was discarded." While Emerson's technic is slightly different, his report seems incredible, and further reports will be awaited.

There is one point the author desires to emphasize. In the previous presentation it was stated that patients under general anesthesia were operated upon in a "head-low" position. This statement should be amplified to the effect that the table should be rotated to a 30-degree angle, with the head downward; and the anesthetist should not be permitted to push the back of the head towards the feet so that the chin is elevated. In a

*Chairman's Address, Section on Ophthalmology and Otolaryngology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

patient lying normally flat, the trachea slopes approximately 25 degrees downward; this is overcome by the 30 degree angle of the table so that there will be less danger of aspirating blood. Other than this comment, the author has nothing further to add to his previous discussion of surgical technic.

ADENOIDECTOMY

However, the author has not been pleased with the results of adenoidectomies by the technic previously described (which was, that the mass of adenoid tissue was removed by the LaForce adenotome, followed by the Vogel curette, the uvula and soft palate then were retracted and any visible remaining adenoid tissue was removed by biting forceps or scissors). Postoperative examination with the nasopharyngoscope all too often revealed the embarrassing presence of comparatively large masses of adenoid tissue.

A review of the literature and surgical instrument catalogues revealed that many capable men have been interested in improving the procedure of adenoidectomy. Curettes were first used and the Barnhill curettes were probably the most popular, but modifications were designed by Stubbs, Vogel and Ingersol. When the LaForce adenotome was introduced it was accepted almost universally but modifications have been made by St. Clair-Thompson and Shambaugh; and Greishaber, Mueller and Storz each manufacture their own variation. Kelley combined the same principle with a palate retractor in designing his direct vision adenotome. Yankauer described his speculum in 1911; other specula and soft palate retractors have since been designed by Sluder, Haslinger, White-Proud, Lewis, Goodyear, Jackson, Lothrop, Latrobe, Cottle and Love, the latter probably the most popular. Yankauer used punches through his speculum to remove tags of adenoid tissue and Meltzer has since designed a complete set of punches with oval, round, and triangular jaws. Louis Guggenheim,[5] and more recently Paul Guggenheim,[6] described a technic of removing adenoid tissue (remaining after using the LaForce adenotome) by sharp dissection.

Middleton[7] designed the Rosenmuller fossa curette and presented it before the Illinois State Medical Society in 1935 but never recorded it in the literature. In response to my inquiry he wrote:

"I remove the larger mass of adenoid tissue with the LaForce adenotome and finish with the Rosenmuller fossa curette. I hold this much as one holds a pen, and bring the cutting blade to bear with the proper pressure, giving the curette a sweeping motion behind the eustachian cushion. I am always able to remove considerable additional tissue."

It is my pleasure to give him full credit for designing this valuable instrument.

As mentioned above, routine postoperative study of the author's cases revealed that, in spite of all the care that had been taken, in many cases rather large masses of adenoid tissue had not been removed; and these masses were found to be located around the posterior attachment of the nasal septum, mushrooming upward into the posterior choanae and above Rosenmuller's fossae. These masses could not be visualized satisfactorily by direct examination at the time of surgery, and the author was quite surprised at being unable to find any adenoid instrument that would satisfactorily remove them. The Rosenmuller fossa curette would remove tissue around the eustachian canal orifice but was too broad to enter the posterior choanae of children and punches could not reach them. As a result the author determined to devise an instrument that would remove these masses.

Logically, it seemed that the first step would be to ascertain the width of the posterior choanae at various ages. Here the author was surprised again. None of the standard treatises on otolaryngology or anatomy carried a description of the size of the posterior choanae in children of any age, though description and measurements were found of the adult posterior choanae. The next step was to investigate the museums and three skulls were found at the Tulane University Department of Anatomy with the following measurements:

Infant near term	6 mm. maximum breadth
Child about 10 yrs.	11 mm. maximum breadth
Child about 16 yrs.	11 mm. maximum breadth

Another series of measurements was taken from the collection of the Department of

Anatomy, Harvard Medical School, as follows:[9]

Years of Age	Maximum Breadth (mm.)
1	6.7
2	8.0
2½	8.5
3	9.2
3¼	8.0
5	9.2
6	9.0
6½	11.0
9	13.7

Of course, these are bony measurements and the thickness of the soft tissue would proportionately decrease the breadth.

Studies were also made of anatomical specimens at the Tulane University Department of Anatomy to devise the proper angle and height of the instrument.

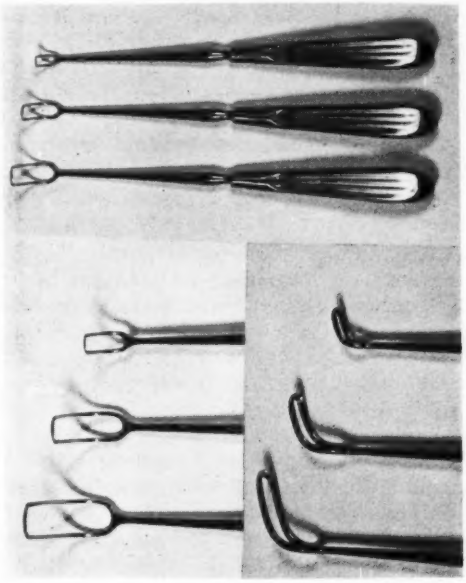


FIG. 1

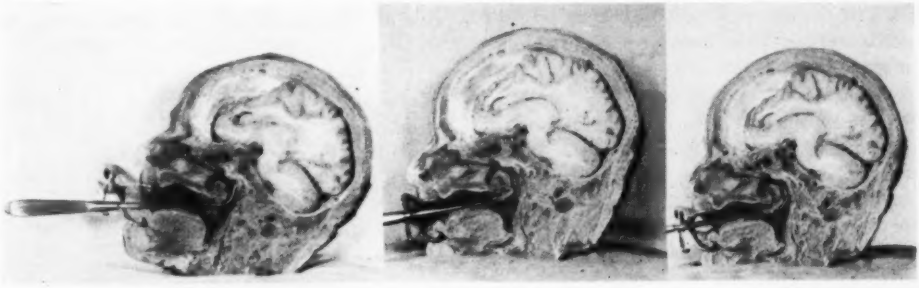
Views of the new curette showing details of sizes, lengths and angles.

As a result of these studies a new set of curettes was designed, really modifications of the Rosenmuller fossa curette, but proportionately longer, with a different angle and in smaller, narrower sizes so that the instrument could be introduced into the posterior choanae. Three sizes were designed:

Adult	20 mm. high x 10 mm. wide
Child	10 mm. high x 8 mm. wide
Infant	10 mm. high x 6 mm. wide

This set of instruments can be used in patients from two years of age up to, and including, adult life. Obviously, the smaller sizes are used more often. The attached illustrations will show comparatively the advantage of the angle and narrowness of this curette over the Vogel and Rosenmuller curettes. The technic of usage is to place the curette high into the posterior choanae with the jaws and blade flat against the posterior wall, then remove the adenoid tissue by shaving straight down the wall. The blade should be razor-sharp. Anatomical studies show that many nasopharynxes slope posteriorly and laterally, but if this technic is followed the adenoid tissue can be cleanly removed without damaging the underlying tissues.

To recapitulate, the now recommended technic of adenoidectomy is to remove the greater mass of adenoids with the LaForce adenotome; the new curette, of the proper size, is then introduced and remaining adenoid tissue curetted away from the Rosenmuller fossae, from the posterior choanae and around the posterior attachment of the nasal septum; the soft palate is then retracted for



A B C

FIG. 2

Comparison of the angle and height of (A) the new curette with (B) the Vogel curette and (C) the Rosenmuller fossa curette.

direct inspection and any remaining adenoid tissue, including lateral bands, is removed with the curette, punch or scissors. If the patient is operated upon in the above described head-low position and suction is used freely, no blood or bits of tissue should be aspirated. Hemorrhage is then controlled with gauze packs. In the occasional case that is not controlled with packs, sutures can be taken with the Dupuy-Weiss needle.

Delayed Primary Hemorrhage.—Delayed primary hemorrhage should be discussed along with the surgical procedures, and should be a rarity if careful hemostasis is observed at the time of operation. Of course it is possible to damage the wall of a blood vessel during the surgical procedure so that, in later hours with a return of normal blood pressure, there is a rupture of the vessel wall and ensuing hemorrhage but this should be a rare occurrence. When it does occur it is a serious complication. Ligation or sutures are required with proper anesthesia.

THE POSTOPERATIVE MANAGEMENT

The postoperative management is as important as the preoperative examination and the surgical procedure, and should be designed to return the patient to normal physical condition and activity as speedily as possible with a minimum of inconvenience. Detailed instructions covering rest, diet and postoperative care must be given each patient and the author has found printed instructions invaluable. Not only does this save time but it provides the patient with definite instructions which can be reviewed as desired and, as a result, the patient follows the postoperative routine more carefully. During the past twelve years these instructions have undergone frequent revision.

Only two phases of postoperative care will be discussed here: the control of postoperative pain and the prevention of secondary hemorrhage, and these are interrelated.

Four years ago, before this group, the author discussed the prevention of secondary hemorrhage following tonsillectomy and reviewed the literature quite thoroughly. Since then there have been comparatively few contributions on this subject but these have been quite interesting.

Some investigators have studied the influence of climatic factors. James[10] reviewed a series of 12,826 tonsillectomies and adenoidectomies in Los Angeles with 177 postoperative hemorrhages, with correlated studies of wind direction, temperature, temperature range, barometric pressure, relative humidity and precipitation; and concluded that a change in temperature is an influencing factor. Pearlman and Loewy[11] reported a series of 1,035 tonsillectomies and adenoidectomies performed in Chicago with similar correlated studies; 4.35 per cent hemorrhage was reported and the authors say:

"It is not concluded that temperature and pressure conditions cause postoperative tonsil and adenoid site bleeding, but on the basis of the reported findings it is conceivable that the time of occurrence may be altered by prevailing conditions of these factors."

Fox[12] commented that:

"Late tonsillar bleeding occured most often in July, August and September but no scientific explanation can be offered for this."

Coombs[13] reported 653 cases, which received different vitamin preparations, and reported an incidence of secondary hemorrhage ranging from 7.3 to 13.96 per cent.

Wright and Pray[14] reported two interesting series of cases. The first series of 411 tonsillo-adenoidectomies performed in Chicago were allowed free use of acetylsalicylic acid, and half were also given vitamin C. They conclude that vitamin C had no startling anti-secondary hemorrhage effect after tonsillectomy. Their second series consisted of 82 tonsillectomies performed on adults under local anesthesia and 667 tonsillo-adenoidectomies on children under general anesthesia at Fargo, North Dakota. All were instructed not to use acetylsalicylic acid. Of the 82 adults, 61 per cent ignored the warning and took acetylsalicylic acid as desired, and in this group there were 20 per cent of secondary hemorrhages, 10 per cent of which were considered severe. Of the 39 per cent who did not take acetylsalicylic acid only 3 per cent had secondary bleeding, none of which was severe. Of the 667 children, 23 took acetylsalicylic acid and reported an incidence of secondary bleeding of 17.4 per cent, none of which was severe; of the 644 who did not take acetylsalicylic acid only 1.5 per cent reported secondary bleeding and only 0.3 per cent were severe.

Fox[12] has continued his excellent work in this field and recently reported a series of 1744 cases, divided into groups. In those

cases given aspirin there was an incidence of approximately 10 per cent of secondary hemorrhage whether vitamins were prescribed or not. Aspirin was forbidden in the remaining groups, some of which were given vitamins, others tyrothricin lozenges, others penicillin injections, others lozenges and injections, and others none of these; and the incidence of secondary hemorrhage in these groups ranged from 0.95 to 1.8 per cent.

To these reports the author wishes to add another series of 150 cases with three secondary hemorrhages from the fossae, an incidence of 2 per cent. While these patients were permitted to take limited amounts of aspirin systemically, the use of aspirin locally was forbidden. A vitamin K preparation was given daily; all were requested to spray the fossa twice daily with sulfapyridine powder and those undergoing adenoidectomy were requested to use nose drops of 20 per cent sulfapyridine in water-in-oil emulsion twice daily, which is part of the routine of our postoperative instructions.

These reports illustrate forcefully the comparative frequency of secondary hemorrhage following tonsillectomy when acetylsalicylic acid is permitted freely, with the comparative rarity of such sequelae when acetylsalicylic acid is not employed. The weight of evidence now indicates that the mechanism of such hemorrhages is not the result of a salicylate-induced hypoprothrombinemia, but rather of the acidifying effect of acetylsalicylic acid upon the saliva; and therefore vitamins K and C have little, if any, value in preventing such hemorrhages. However, the author feels that adequate intake of vitamins has a stimulating influence on postoperative recovery, and that they should be employed.

There is another factor which the author feels is important: the possibility of postoperative infection of the fossae.

Apparently Victor[15] was the first to report the use of a chemotherapeutic agent following tonsillectomies, administering sulfanilamide powder locally three times during the first 24-hour period. McGovern[16] later reported the use of sulfathiazole gum following tonsillectomy; most interestingly, he said: "Sulfathiazole tablets used internally or dissolved on the tongue were not found to be of value." He concludes that "a preliminary study of the routine use of sulfathiazole gum after tonsillectomy indicated a reduction in the incidence of secondary hemorrhage," and "appeared to exert a favorable effect on the healing of the pharyngeal wound."

More recently Fox has reported employing various types of tyrothricin lozenges, sulfathiazole gum and penicillin injections.

For the past several years the author has routinely prescribed a powder-blower with sulfa powder, to be used twice daily postoperatively, until the fossae heal. At first sulfanilamide or sulfathiazole powder was used but since Cunningham[17] reported the hemostatic properties of sulfapyridine, that drug has been used exclusively. For about the same period of time the author has been prescribing a water-in-oil emulsion of sulfa powder as nose drops to prevent any infection of the adenoid area. At present a 20 per cent emulsion of sulfapyridine is being used routinely.

About three years ago the author considered the use of bacitracin postoperatively in the fossae. Since the cost of bacitracin powder, compared to sulfapyridine, is rather high, it was thought that bacitracin lozenges might be used. However, it was thought desirable to know whether or not the use of such a preparation would give adequate application. A trial batch of bacitracin lozenges was made up with methylene blue,* and these were prescribed postoperatively to a group of adult patients whose cooperation could be assured. It was most surprising to note that the methylene blue coated the lower two-thirds of the fossae, but that the upper third of each fossa remained uncoated. For that reason the author has felt that neither lozenges nor gum offers adequate application and has continued the use of sprays of sulfapyridine powder.

Control of Secondary Hemorrhage.—As these figures would indicate, the author has had so few secondary hemorrhages that his experience in controlling them is probably of little value. Those interested are referred to the detailed report previously published.

SUMMARY

To summarize, it is the author's opinion that:

(1) Tonsillectomies and adenoidectomies

*The author expresses appreciation to The Commercial Solvents Company for their cooperation.

should be accorded the serious consideration they deserve.

(2) Operation should be performed only after thorough study and careful diagnosis.

(3) The whole tonsil, and nothing but the tonsil, should be removed with a minimum of trauma.

(4) Adenoidectomy should be carefully, meticulously and thoroughly performed; and the author has described a new set of curettes which, in his hands, have materially improved the procedure.

(5) Hemorrhage should be completely controlled before the patient leaves the operating room.

(6) Aspirin may be permitted systemically in limited amounts; it should never be used locally in any form following tonsillectomy.

(7) While salicylate-induced-hypoprothrombinemia is probably rare following tonsillectomy, vitamins offer protection against such an occurrence, may contribute to the patient's sense of well being, and should be used.

(8) It is hoped that continued interest in this field will achieve even better results.

BIBLIOGRAPHY

1. Jones, Edley H.: (a) The Management of Tonsillectomy. The Mississippi Doctor, **20**:65-71 (July) 1947. (b) The Prevention of Secondary Hemorrhage Following Tonsillectomy. Sou. Med. Jour., **42**:124-127 (Feb.) 1949.
2. Belton, M. K.; and Leigh, M. D.: quoted by Adin, Louis E. and Singleton, J. Dudley, Progress in Otolaryngology: Tonsils and Adenoids. Archives Otolaryngology **54**:428-445 (Oct.) 1951.
3. Harlowe, H. D.: Complications Following Tonsillectomy. Laryngoscope **58**:861-878 (Aug.) 1948.
4. Emerson, Ernest B., Jr.: Closed Fossa Tonsillectomy. J.A.M.A. **149**:348-350 (May 24) 1952.
5. Guggenheim, Louis: Direct Adenoidectomy. Archives Otolaryngology **33**:314-315 (Feb.) 1941.
6. Guggenheim, Paul: The Adenoid Problem. Archives Otolaryngology **55**:146-152 (Feb.) 1952.
7. Middleton, Harry E.: Personal Communication.
8. Made by Dr. Harold Cummins, Professor, Department of Anatomy, Tulane University.
9. Made by Dr. Marc P. Moldawer, Anthropologist.
10. James, A. G.: Hemorrhage Following Tonsillectomy and Adenoidectomy. Annals of Western Medicine and Surgery **2**:558-561 (Dec.) 1948.
11. Pearlman, S. J.; and Loewy, A.: Secondary Tonsillar And Adenoid Hemorrhage in Relation to Barometric Pressure Changes. Archives Otolaryngology **53**:527-529 (May) 1951.
12. Fox, S. L.: Bleeding Following Tonsillectomy and Adenoidectomy. Annals of Otology, Rhinology, and Laryngology **57**:1032-1040 (Dec.) 1948. (b) Bleeding Following Tonsillectomy. Laryngoscope **62**:414-425 (April) 1952.
13. Coombs, A. J.: Study of Delayed Bleeding Following Removal of Tonsils and Adenoids. Laryngoscope **60**:296-307 (March) 1950.
14. Wright, W. K.; and Pray, L. G.: Factors Influencing Late Secondary Hemorrhage Following Tonsillo-adenoidectomy. Archives Otolaryngology **53**:277-284 (March) 1951.
15. Victor, K. N.: Local Use of Sulfanilamide in Tonsillectomies. Archives Otolaryngology **37**:438-439 (March) 1943.
16. McGovern, Francis H.: Prevention of Secondary Post-Tonsillectomy Hemorrhage with Sulfathiazole Gum. Archives Otolaryngology **40**:196-197 (Sept.) 1944.
17. Cunningham, B. P.: Clinical and Experimental Studies with Sulfapyridine as a Hemostatic Agent. Annals Otology, Rhinology and Laryngology **51**:301-316 (June) 1944.

APPENDIX

POST TONSILLECTOMY INSTRUCTIONS

Dr. Edley H. Jones to his patients.

Now that your tonsils have been removed, the speed of your recovery depends, very largely, upon you. If you will carefully follow these instructions, you will recover much more rapidly.

It is important that you have adequate rest during the first few days. This not only means that you must not attempt any unusual or violent exertion but means that you should not attempt to assume your regular routine for at least a full week. You should spend most of the first three days in bed, and you should have very little company. On the fourth day you can start getting around, gradually increasing your activities, but you must particularly avoid fatigue. At any time that you feel tired, lie down and rest.

It is absolutely necessary that you maintain an adequate fluid intake. Patients may go for several days without solid food provided they have adequate nourishing liquids; but failure to take liquids for even one day may cause acidosis. In the very early stages acidosis can be controlled with adequate alkalinizing fluids but when it progresses to the point of nausea, it is necessary to take the patient back to the hospital and administer glucose intravenously. Therefore, I emphasize the importance of taking an abundance of fluids. Adults should take approximately two quarts of liquids daily and even small children should take at least one quart, preferably more. Your principal liquid is water but you can include fruit juices, bottled drinks (such as coca-cola or 7-up), tea, coffee, broths, soups, gruels, milk, ice cream and jello. I particularly recommend beef and chicken broth, seasoned only with a small amount of salt and served lukewarm, in a cup, so that you can drink it more easily. Incidentally, you will find that you can drink more fluids with less difficulty if you will "gulp" them, drinking half a glass at a time, instead of taking one swallow at a time. You will have to try this to believe it, but it is so!

Of course you will want solid foods and you may have them as soon as you can swallow them but they should be soft and bland. You must avoid foods that will burn or scratch your throat. For example, orange juice might burn your throat the first day but a weak orangeade would not and, after three days, orange juice will not. On the other hand tomato juice will burn your throat as long as there are any areas that are not healed, and must be avoided until you have entirely recovered. Highly seasoned foods (particularly those foods seasoned with pepper) and alcoholic drinks must be avoided for the same period of time. Strangely enough, banana will cause some discomfort during the first four or five days but may be taken thereafter. Also you should avoid crisp toast, bacon, potato chips, fried chicken, all foods that might scratch your throat, until it is healed. For the first day following the operation I would suggest that you have liquids, as described above. The second day, you may add cream of wheat, oatmeal, grits, whipped potatoes, poached egg, or soft boiled eggs and milk toast. The third day you may add rice, spaghetti, macaroni, noodles, fried or scrambled eggs, stewed or smothered chicken, smothered meat balls, stewed veal or lamb and light bread (without crust). Thereafter, you may add boiled vegetables, tender roast, and so on.

Proper elimination is quite important. If you do not have a bowel movement the day after the operation, you should take a laxative at bedtime; should the laxative fail to act, you should take an enema the following day and a larger dose of laxative that night. It is important that you have daily elimination.

Of course, your throat will be sore, uncomfortable and probably dry during the first few days. The dryness can be relieved by taking liquids, cracked ice, or using a mildly alkaline throat wash. Naturally, your throat is too sore to gargle during the first few days but you can take Dobell's solution, soda water (one teaspoonful to the glass) or lavoris (diluted with 5 parts of water) and use as a throat wash. Stiffness of the throat and spasms of the muscles can be relieved, in large part, by chewing gum and I recommend that you chew gum freely, any mild gum, such as Beeman's pepsin, Wrigley's doublemint, or Beechnut spearmint gum. Dentyne is too strong. DO NOT USE ASPERGUM:® Aspergum® may make your throat bleed. (If there is any reason that you want to take aspirin in limited quantities you may do so but do not chew aspirin or dissolve aspirin tablets in the mouth; this is important for it, too, could make your throat bleed.) These measures usually relieve the soreness for small children; small doses of codeine will be prescribed for older children and adults. (Codeine has a slightly constipating effect and it is important that you watch elimination.)

It is important that infection of the wound be prevented and you will be given a powder blower with sulfapyridine powder; please spray the tonsil fossae twice daily. The day after the operation, the fossae will be covered with a cream

colored membrane; after three to five days you will note small pink areas of granulation forming in the fossae; when the fossae have entirely healed the throat is again normally pink and all membrane has disappeared; you must spray your throat twice daily until the throat has healed entirely. If your adenoids were removed, you will also be given a prescription for a water-in-oil emulsion of sulfapyridine, one-half-dropperful should be dropped in each nostril (while lying down) twice daily. This will aid in preventing any postoperative infection in the adenoid area, and will keep the throat from feeling dry and uncomfortable.

You will also be given a prescription for vitamin capsules; please take one daily, after any meal (small children, or patients who cannot swallow capsules, may take the powder out of the capsule, mixing it with water). This will aid in preventing any postoperative hemorrhage by increasing the clotting power of your blood.

A moderate degree of fever is to be expected the first two or three days; this is a normal reaction and no treatment is indicated. Some patients complain of pain in the ears after operation and this is usually relieved by a hot water bottle or heat pad applied to the ear. It may be controlled by taking codeine (prescribed for the soreness of the throat) or by taking aspirin (take it, do not chew it!). If the pain in the ear becomes throbbing in character, or if the temperature goes over 101° F., please phone me.

Some patients worry over the possibility of a postoperative hemorrhage. In my experience this is rare, and has never been serious. Immediately following the operation you may expectorate blood streaked saliva but if you should start spitting red blood, as if you had cut your finger and it was bleeding, you should sit up with a basin in your hand and lean forward so that the blood will run out of your mouth, and not into your stomach (which later causes nausea and vomiting). Next, you should spray the fossae repeatedly with sulfapyridine powder. Then, have someone phone me. As I stated above, secondary hemorrhage is a very rare experience for me but I want you to know what to do should it happen to you, and you can be assured that I will take care of you.

If you will follow these instructions I feel sure you will recover rapidly and will be well pleased with the results of the operation.

MILKERS' NODULES*

By EDWARD P. CAWLEY, M.D.
CHARLES W. WHITMORE, M.D.
and
CLAYTON E. WHEELER, M.D.
Charlottesville, Virginia

Milkers' nodules is apparently an uncommon disease in the southern United States, despite progressive growth in the dairy industry in this part of the country. There is reason to believe, however, that many cases of this unique disorder are not recognized as such, and that the actual incidence is considerably higher than is indicated by the number of recorded cases. The purpose of this communication is to direct attention to the occurrence of milkers' nodules in the South.

Incidence, Etiology and Epidemiology.—Milkers' nodules was first reported in the American literature by Becker[1] in 1940. A total of only 20 cases, including the two recorded here, have been reported in this country to date.[1 2] Milkers' nodules is an occupational disease of milkers in most instances. Available evidence indicates that it is caused by infection of the skin with the virus of natural or false cowpox,[2 3] as distinguished from vaccinia, which is caused by the virus of genuine cowpox. Studies of material from milkers' nodules with the electron microscope have demonstrated virus-like corpuscles which differ from those of the vaccinia virus in size and shape.[4] The disease is known to be transmitted from the milk cow to man, and may be spread from cow to cow by the milker. The incubation period is 5 to 7 days and the infection ostensibly enters the skin through an abrasion, although injury to the skin is probably not a prerequisite.

Clinical Manifestations.—Milkers' nodules usually occur on exposed areas, including the fingers, hands, forearms, face and neck. The lesions begin as erythematous papules which develop slowly and persist for a few weeks or months. When fully developed they are firm, reddish or reddish-blue nodules from 1 to 2 cm. in diameter. There may be from one to 40 lesions but the usual number is less than10. The nodules are asymptomatic, but lymphangitis, lymphadenitis and a mild constitutional reaction sometimes occur as a result of secondary infection. A few cases of milkers' nodules have been reported in which secondary dermatoses, or toxic eruptions, appeared. These consisted of transient papular or papulo-vesicular lesions which were most pronounced on the trunk and occurred from four to 17 days after appearance of the nodules.[3]

Differential Diagnosis.—A fully developed milkers' nodule may resemble a pyogenic granuloma, an infected verruca vulgaris or a malignant melanoma. While the lesions of true cowpox are vesicular or pustular, those of false cowpox are solid, papular and nodular. The diagnosis can be made on the basis of the history and the clinical features described above in most instances. In doubtful cases the entire lesion, or a portion of it, should be excised for microscopic examination.

Histopathology.—The histopathology of milkers' nodules is distinctive but not diagnostic. The epidermis is parakeratotic and acanthotic and may contain tiny vesicles. The dermal portion of the lesion is sharply circumscribed and consists of many new formed

*Received for publication September 10, 1952.

*From the Department of Dermatology and Syphilology, University of Virginia Medical School, Charlottesville, Virginia.

capillaries, each surrounded by an intense inflammatory infiltrate.

Treatment.—Milkers' nodules is a self-limited and relatively benign disease which usually requires no treatment. Complicating lymphangitis and lymphadenitis are amenable to the usual treatment, including rest, the local application of heat and the administration of antibiotics.

CASE REPORTS

Case 1.—E. M., a 42-year-old white man was first seen in the Dermatology Out-Patient Clinic of the University of Virginia Hospital in April 1952. Several weeks prior to examination he had noted the onset of a small vesicle-like lesion on the dorsum of the right thumb. A few days after the appearance of the lesion on the thumb, similar lesions appeared on the dorsum of the right third and fourth fingers and others on both palms.

At the time of examination there were eight nodules on the hands, located as described above. They varied from 0.5 to 1.5 cm. in diameter and were elevated about 0.5 cm. The nodules were bluish-red in color, firm on palpation and covered by normal epidermis *(Fig. 1)*. The lesions were neither tender nor painful.

The patient gave a history of having been a dairy farm worker and of milking cows regularly. He said that several of the cows on the farm where he worked had reddish nodules on their udders just prior to the onset of his eruption. He had commented to his wife that the cows appeared to have been stung on the udders by bees.

The diagnosis of milkers' nodules was made and the patient was given an antibiotic ointment to apply to the lesions in an attempt to prevent secondary infection. He returned several weeks later, however, with a severe lymphangitis and lymphadenitis involving the right arm. Hospitalization was necessary. After approximately a week of treatment with hot wet dressings, and penicillin by injection, the complications had subsided. All but one of the nodules had disappeared completely three months after the onset of the disease.

Case 2.—H. B., a 41-year-old white woman was seen in the Dermatology Out-Patient Clinic of the University of Virginia Hospital for the first time in May 1952. She had developed a small pustule on the palm of the right hand approximately two weeks prior to examination.

At the time of examination the patient was found to have an elevated, red, granulomatous lesion approximately 1.5 cm. in diameter and elevated 0.5 cm. on the right palm *(Fig. 2)*. Shortly before examination in the Dermatology Clinic the patient had been treated by her local physician with intramuscular penicillin for lymphangitis of the right arm.

The patient gave a history of having been employed as a milker until one month prior to her examination in the Dermatology Clinic. She said that there were cows in the dairy herd with nodules on their udders and that these lesions bled freely when milking was attempted.

The diagnosis of milkers' nodule was made and

FIG. 1

Milkers' nodules on the fingers in *Case 1*.

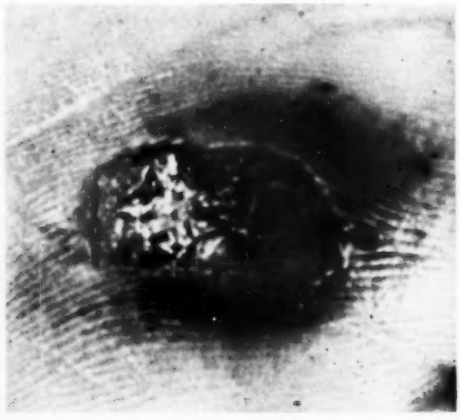


FIG. 2

Close-up view of the solitary milkers' nodule on the right palm in *Case 2*.

the patient was instructed to remain away from her work and to apply magnesium sulfate wet dressings to the hand for several hours each day. She returned one week later at which time the lesion had begun to resolve. The patient did not return to the clinic after this visit.

SUMMARY

(1) Two cases of milkers' nodules occurring in Virginia have been reported.

(2) Important features of the disorder, including incidence, etiology, epidemiology, clinical manifestations, differential diagnosis, histopathology and treatment have been briefly described.

(3) Attention is directed to the importance of recognizing this disease in the South, especially in view of the progressive growth of the dairy industry in this part of the country.

REFERENCES

1. Becker, F. T.: Milkers' Nodules. J.A.M.A. 115:2140 (Dec. 21) 1940.
2. Nomland, Reuben; and McKee, Albert P.: Milkers' Nodules. Arch. Dermat. & Syph. 65:663 (June) 1952.
3. Sonck, C. E.: Milkers' Nodules with Allergic Secondary Eruptions. Acta Allergologica 4:241, 1951.
4. Puntigam, F.; and Orth, E.: A Contribution to the Etiology of Milkers' Nodules. Wien. Klin. Wschr. 63/30 540, 1951. Abstracted in Excerpta Medica, Dermatology and Venereology, 6:159 (Apr.) 1952.

PROPHYLAXIS OF PEPTIC ULCER*

By MILFORD O. ROUSE, M.D.
Dallas, Texas

The problem of peptic ulcer presents a stimulating challenge from economic, scientific, and humanitarian viewpoints. Hundreds of papers have been given on peptic ulcer, years have been spent in research, and dozens of therapeutic regimens advocated, and yet in the United States there is a prevalence of 500,000 cases (number at any one specified time), and an estimated annual incidence of at least 1,000,000 cases. Conservative calculations (based on autopsy and other data) indicate that of the present population of this country, 15,000,000 individuals have had or will have a peptic ulcer by the time they die! Public Health surveys point to a loss of at least 13,000,000 days annually by workers in this country, to say nothing of the economic loss from impaired efficiency of workers with ulcer, and from death. With all of our advances in medical science, the mortality from ulcers of the stomach and duodenum still exceeds 8,000 annually. *Table 1* with mortality statistics from the states in the territory of the Southern Medical Association, shows pitifully little reduction in the rate per 100,000 population in these areas, and the U. S. Public Health Service estimate of a mortality rate of 5.5 per 100,000 population is exactly the same as it was in 1924 *(Table 2)*. In comparison with the main chronic diseases, the U. S. Public Health Service places peptic ulcer as tenth in estimated number of deaths, twelfth in number of working days lost, fourteenth in number of invalids, and twentieth in number of cases *(Table 3,* figures for 1937).

In view of these facts and estimates, are we as physicians, and especially as gastroenterologists, doing what we could and should do to reduce the incidence, prevent the recurrence, and lower the mortality of peptic ulcer? Probably you will agree with me that we are falling far short of our potentialities in gastroenterologic preventive medicine.

The reduction in primary incidence of peptic ulcer may be a Utopian ideal, and will be discussed last. Of the 500,000 cases of ulcer active at any one time, the most conservative estimates indicate that at least 50 per cent will have recurrences. So here is a field in which surely we can improve our efficiency.

The high rates of incidence and of recurrence of peptic ulcers are doubtless due to the multiplicity of etiological factors, and the acknowledged tendency of ulcer to recur. Time does not permit a discussion of etiology, but comment is made that the probability of multiple causative factors seems corroborated by the known satisfactory responses to multiple types of therapy. Sullivan and McKell, members of this Section, have a most intriguing theory of multiple etiological factors, for a discussion of which you are referred to their delightful monograph, "Personality in Peptic Ulcer."

INDIVIDUALIZATION PARAMOUNT

From the very nature of the disease, every case of peptic ulcer must be individualized, especially in history taking, in explaining the diagnostic summary and outline of treatment, and in systematic personal "follow-up."

In history taking, the full confidence of the

*Chairman's Address, Section on Gastroenterology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

patient must be invited and deserved. Here the art of medicine serves splendidly as the physician painstakingly searches into the background of heredity, childhood conflicts, personality factors, reactions to environmental problems, any one of which may be a possible "precipitating factor" in ulcer. To warrant the full cooperation of an intelligent patient, the physician must have carried out a most thorough diagnostic study, and before he gives to a patient that advice that possibly may call for a complete reorganization of his life, he should have confirmed the diagnosis of peptic ulcer by every method at his disposal, namely: by evidence from x-ray, test meal, and examination of stool for occult blood.

In the successful treatment of peptic ulcer, designed to prevent or minimize recurrence, there is a triangle of factors: (1) the physician, (2) the patient, and (3) the nature of the disease. Today we are emphasizing the first factor, since in all too many instances failure comes because the physician does not take the time nor have the patience to explain fully to the patient the nature of peptic ulcer, and the inescapable fact that an ulcer-bearer should consider himself on ulcer treatment, active or precautionary, for the remainder of his life. Incidentally, in all honesty, can we claim to CURE peptic ulcer, or do we not really just help the patient to CONTROL his peptic ulcer? There is a most interesting similarity in the successful management of peptic ulcer with the conditions of pulmonary tuberculosis and diabetes mellitus, so far as a long range program is concerned.

The physician should get the intelligent cooperation of his patient by frank, friendly education, not by threatening nor by arbitrary intellectual browbeating. To the patient should be explained the rationale of:

Diet.—Stressing the principle of frequent feedings of non-irritating food in the immediate program, and of sensible eating in a long range regime.

Medicine.—For acid neutralization and for relaxation where needed. If a physician points out the physiological effects of caffeine, tobacco, and alcohol, the intelligent patient will usually decide voluntarily on proper abstinence.

Adjustment.—Of daily routine within the patient's limits of reserve strength. He should be urged to cultivate a "leisurely efficiency" and to meet all problems squarely, solving them or making satisfactory adjustment to them as the case may be. A sincere, honest invitation to the patient to make practical use of religious faith in meeting difficult situations is highly in order. Individualization is very necessary, and the doctor should make practical suggestions on solving specific problems of the patient.

Maintaining Optimum Personal Hygiene.—In regular dental care and in avoiding respir-

ULCER OF STOMACH OR DUODENUM MORTALITY IN SOUTHERN MEDICAL STATES*

	Number					Rate per 100,000				
Area	1945	1944	1943	1942	1941	1945	1944	1943	1942	1941
United States	8,958	8,765	9,333	9,259	8,864	6.8	6.6	7.0	6.9	6.7
Maryland	111	114	128	107	113	5.2	5.4	6.1	5.4	5.9
District of Columbia	36	49	50	49	43	3.8	5.2	5.6	5.7	5.7
Virginia	159	158	186	171	189	5.2	4.9	6.0	5.7	6.7
West Virginia	85	59	89	106	112	4.9	3.4	5.1	5.8	5.9
North Carolina	153	132	146	153	141	4.4	3.7	4.0	4.3	3.9
South Carolina	74	74	88	95	104	3.9	3.9	4.5	4.7	5.2
Georgia	167	156	177	197	164	5.2	4.8	5.5	6.1	5.1
Florida	146	148	159	146	155	6.1	6.2	6.7	6.8	7.7
Kentucky	150	185	164	182	170	5.8	7.0	6.0	6.5	6.0
Tennessee	172	160	166	149	164	6.0	5.6	5.6	5.1	5.6
Alabama	131	131	120	117	148	4.7	4.7	4.1	4.0	5.1
Mississippi	85	80	107	110	95	4.1	3.7	4.8	4.9	4.3
Missouri	277	247	235	308	227	7.8	6.9	6.3	8.1	6.0
Arkansas	60	77	77	103	81	3.4	4.3	4.1	5.2	4.1
Louisiana	97	106	101	141	98	3.9	4.2	4.0	5.5	4.0
Oklahoma	89	130	123	131	114	4.4	6.3	5.7	5.9	5.0
Texas	284	260	309	310	315	4.2	3.8	4.4	4.6	4.8

*From the National Office of Vital Statistics, U. S. Public Health Service.

TABLE 1

atory infections. Caution should be urged against the indiscriminate use of certain drugs.

The theoretically ideal prophylactic for peptic ulcer would be a possible hormonal protective agent, that might increase the inherent resistance of the gastro-intestinal mucosa and successfully limit the activity of the acid secreting cells. Enterogastrone, anthelone, and similar agents doubtless represent steps in the right direction but have not yet proved their practical value.

Much value lies in advising a patient to resume a fairly strict ulcer program at times of expected stress or strain, or at the appearance of the least evidence of a return of symptoms. An excellent prophylactic measure for every ulcer patient would be the routine resumption of at least two weeks of ulcer diet and medication every six months for a period of several years.

COMPLICATIONS

No physician should consider his obligations fulfilled until he has educated the ulcer-bearer on the main complications of peptic ulcer: perforation, hemorrhage, obstruction, and recurrence. The doctor himself should keep constantly on the alert for any complication calling for surgery.

As gastro-enterologic internists we are most thankful for what surgery can accomplish for ulcer patients in properly selected cases, but also have a great privilege and obligation in protecting patients against possible hasty or unwarranted operations. This is true particularly in the instance of younger ulcer patients,

TREND OF CRUDE DEATH RATES, ULCER OF STOMACH OR DUODENUM*

Year	Deaths from ulcer of stomach or duodenum	Rate per 100,000 estimated population	Year	Deaths from ulcer of stomach or duodenum	Rate per 100,000 estimated population
1951	....	5.5**	1943	9,333	7.0
1950	....	5.3**	1942	9,259	6.9
1949	7,809	5.3	1941	8,864	6.7
1948	8,708	6.0	1940	8,948	6.8
1947	8,611	6.0	1939	8,875	6.8
1946	8,164	5.8	1934	7,690	6.1
1945	8,958	6.8	1929	7,345	6.4
1944	8,765	6.6	1924	5,422	5.5

*From the National Office of Vital Statistics, U. S. Public Health Service, Sept. 4, 1952.
**Preliminary rate estimate only available.

TABLE 2

RANK OF SPECIFIELD CHRONIC DISEASES ACCORDING TO FOUR INDICES*

Chronic disease	Rank According to: Estimated number of days lost, 1937 (Health Survey)	Estimated number of invalids, 1937 (Health Survey)	Estimated number of cases, 1937 (Health Survey)	Estimated number of deaths, 1937 (Health Survey)
Nervous and mental diseases	1	1	10	7
Rheumatism	2	2	1	14
Heart diseases	3	3	2	1
Arteriosclerosis and high blood pressure	4	5	3	3
Tuberculosis (all forms)	5	4	15	5
Cancer and other tumors	6	9	13	2
Nephritis and other kidney diseases	7	7	9	4
Diseases of female organs	8	10	14	15
Hay fever and asthma	9	8	4	19
Diseases of gallbladder and liver	10	12	17	8
Diabetes mellitus	11	6	16	6
Ulcers of stomach and duodenum	12	14	20	10

*From the National Health Survey, 1935-1936, Bulletin 6, page 7.

TABLE 3

those under 35 years of age. Such individuals, with the vigor and impatience of youth, may be tempted to seek surgery as a "short-cut," forgetting that surgery is not a cure-all, and gives no permanent insurance against further trouble. Proper and successful surgery does reduce the probability of recurrence, and may make possible a more liberal program (primarily by reducing the acid-secreting area of stomach mucosa), but the patient will always have his ulcer diathesis, and should be warned of this fact before surgery is undertaken.

Gastro-enterologists and other internists owe it to their patients to follow closely those who come to surgery, especially after the immediate postoperative period. It is possible that some surgeons may be too free with "liberalizing" advice. After surgery, ulcer patients still need periodic check-ups. An ideal program is a gastro-intestinal x-ray study one month after surgery, then three months later, then after an interval of six months, then at yearly periods. X-ray interpretation of postoperative stomachs is difficult at best, and is greatly aided by comparative studies made at the intervals suggested. Physicians have the necessity of watching the angle of economic costs to the patient, but a patient who has had surgery for ulcer has invested a lot in himself already and should expect still to have the financial responsibility of protecting that investment.

PATIENT-PHYSICIAN PARTNERSHIP

A peptic ulcer patient should consider his physician as his partner in the most important business of handling his ulcer, especially in preventing a recurrence. The physician, in turn, should look after his end of the partnership, not only by devoting ample and intelligent time in making the original study and in outlining treatment, but also by a systematic follow-up program that will make it difficult for a patient to escape adequate medical care. Patients are human, and even with the best of intentions may get busy and neglect follow-up reports and examinations, particularly when they feel well. The suggestion is made that every physician maintain a Peptic Ulcer Registry (see *Chart 1*) wherein is outlined clearly for each ulcer patient a definite schedule of "report conferences" and follow-up examinations. The patient should be given a copy of the schedule, and the doctor's secretary or office nurse can work out her own system of checking with the patient if he fails to report on the day suggested. Needless to say, no hard-and-fast time rules can be set, because every ulcer patient's program must be tailored individually. Out-of-town patients and those giving most promise of faithful cooperation, need not be seen in report as often as those with obviously less capacity or inclination to receive proper guidance.

In *Chart 1* are shown the front and back of a possible peptic ulcer registry which any physician may vary to suit his own needs. A fairly standard registry form would make it possible for every doctor to correlate clinical observations on his ulcer patients and also make a very practical plan of closely following every patient with peptic ulcer.

CIVIC OPPORTUNITIES

As to possible prophylaxis against primary incidence of peptic ulcer, as citizens, we physicians talk before noon-day service clubs,

Chart No. PEPTIC ULCER REGISTRY Code No.

Name: Age: Sex:
Marital Status: Occupation:
Symptoms: Type Onset Duration
Hereditary factors:
Personality observations:
Environmental observations:
Precipitating causes:
Previous medical care: Type and scope of diagnostic study
—other diseases, especially other gastro-intestinal
—former surgery
Previous ulcer therapy Response thereto
—length of time followed
Any recurrences? If so, apparent cause?
Present examination: significant physical findings
Blood count: Wassermann: Stool—occult blood
Test meal: Type Blood: Free HCl: Total acidity
X-ray findings:
Location of ulcer: Size:
Hemorrhage? Obstruction?
Gastroscopic findings:
Treatment outlined—date:
Diet: Medical: Other:

(On reverse side of above page)

Name: Diagnosis:
Date treatment started:
Report call due: Report made: Re-x-ray due: X-ray made:

Comments:

CHART 1
Suggested Peptic Ulcer Registry

women's organizations, P. T. A. and church groups on cancer, weight-control, polio, or new "wonder drugs." Why should we not make regular talks on peptic ulcer: its economic importance, predisposing causes, symptoms, potential dangerous sequelae, and the necessity of long range care? Newspapers and radio and television stations welcome attractive articles or interesting talks on ulcer. Health education facilities such as health museums are valuable adjuncts. The ladies of the women's auxiliaries could do a magnificent job of ulcer education if given a chance.

Gastro-enterologists can render a valuable service in talking and writing frequently on peptic ulcer, for the special benefit of general practitioners and physicians in other specialties. Members of this section within the next year could with profit offer before county and state societies good papers on peptic ulcer, particularly its prevention.

A valuable aid in keeping in our working mental horizon the importance of peptic ulcer, will be for one or more gastro-enterologists from each state within the territory of the Southern Medical Association to analyze the data on deaths from peptic ulcer in his own state for a designated year, 1945 for example. The data could be assembled on standardized forms and would constitute most valuable material for a possible round-table review at a subsequent session of this section. After all, the most practical field for improvement is in our home areas, and a study of failures of treatment in our own states should be most informative.

Another valuable aid in strengthening the prophylaxis of peptic ulcer will be for each of us to keep more systematic data for analysis on the next 100 (or more) consecutive cases of peptic ulcer seen in private or dispensary practice, with later review at a round-table session as mentioned above. The regular use of a peptic ulcer registry in our own offices will do most to help us to reduce the incidence, prevent the recurrence, and lower the mortality of peptic ulcer. May we all do more and better gastro-enterologic preventive medicine!

SUMMARY

(1) In spite of tremendous scientific advances in research and therapy on peptic ulcer, the disease still ranks inexcusably high in the United States in economic loss and even in mortality.

(2) The successful management of peptic ulcer is a lifetime proposition, just as in tuberculosis and diabetes mellitus, and failure comes when the patient does not recognize and observe this fact.

(3) The patient and the physician are partners in the most important business of therapy for peptic ulcer. The doctor's big responsibility lies in taking the interest and time to educate his patient on the nature of peptic ulcer, and in outlining and supervising a systematic long range program of reports and follow-up examinations.

(4) A most valuable aid is the systematic use by the physician of a peptic ulcer registry for each ulcer patient. Such a registry not only assures more intelligent and willing cooperation by the patient, but also provides valuable clinical data that can be shared with other physicians in periodic reviews.

(5) Gastro-enterologists can talk and write more frequently on peptic ulcer, particularly on the prevention of recurrences, for the benefit of other physicians; and as citizens can promote excellent health education by speaking on peptic ulcer before lay groups.

BIBLIOGRAPHY

1. Dublin, Louis I. (Vice-President and Statistician, Metropolitan Life Insurance Co., New York): Personal communication to author.
2. Metropolitan Life Insurance Co. (New York): Statistical Bulletin, July, 1949.
3. Jennison, Janette: Observations Made on Group of Employees with Duodenal Ulcer. Amer. J. Med. Sciences, 196:654-662 (Nov.) 1938.
4. Collins, Selwyn D. (Head Statistician, Division of Public Health Methods. Public Health Service): Personal communication to author.
5. National Institute of Health, U. S. Public Health Service, Div. of Public Health Methods: National Health Survey (1935-1936), Preliminary Reports. Bulletin 6, Sickness and Medical Care Series.
6. National Office of Vital Statistics, U. S. Public Health Service, Vital Statistics—Special Reports, National Summaries, 27: No. 43 (March 15) 1948. Philadelphia: The Blakiston Company, 1950.
7. Collins, Selwyn D.; Phillips, F. Ruth; and Oliver, Dorothy S.: Reports on Samples of Eastern Health District of Baltimore, 1938-1943. Public Health Reports, Reprints No. 3046, 3114, 3130.
8. National Office of Vital Statistics, U. S. Public Health Service. Vital Statistics—Special Reports, National Summaries, 35: No. 18, 1948; 36: No. 14, 1949. Philadelphia: The Blakiston Company, 1950.
9. Ivy, A. C.: The Problem of Peptic Ulcer. J.A.M.A., 132: 1053-1059 (Dec. 28) 1946.
10. Ivy, A. C.; Grossman, M. I.; and Bachrach, W. H.: Peptic Ulcer. Philadelphia: The Blakiston Company, 1950.
11. Sandweiss, David J.; and American Gastroenterological Association. Peptic Ulcer, pp. 192 and 427. Philadelphia: W. B. Saunders Company, 1951.
12. Bockus, H. L.: Gastroenterology, Vol. I, pp. 318 and 471. Philadelphia: W. B. Saunders Company, 1944.
13. Althausen, Theodore L.: Prevention of Recurrences in Peptic Ulcer. Ann. Int. Med., 30:544 (March) 1949.
14. Sullivan, A. J.; and McKell, T. E.: Personality in Peptic Ulcer. Springfield, Ill.: Charles C. Thomas, Publisher, 1951.

AN ADEQUATE OPERATION FOR CARCINOMA OF THE STOMACH*

By FRANKLIN E. WALTON, M.D., F.A.C.S.
St. Louis, Missouri

It is my privilege this morning to extend to the visiting surgeons of the Southern Medical Association a most hearty welcome to the City of Miami in general and to these surgical sessions in particular. May I even more emphatically open our doors of hospitality to the distinguished surgeons from Cuba, from Latin America and South America and the other foreign lands. To entertain you will be a rare opportunity and we sincerely hope that the Southern Medical Association, the second largest group in organized medicine, can measure up to your expectations.

As Chairman of the Section on Surgery, I should like to discuss with you an adequate operation for carcinoma of the stomach.

Approximately one-third of all malignant tumors are situated within the stomach. Twenty-four thousand deaths from cancer of the stomach were reported in Vital Statistics for the year of 1949. Even more striking is the fact that during World War II there were 225,000 American casualties but during that same period of time, 154,000 civilians were known to have died of cancer of the stomach. These rather brutally evident facts point out the pressing need for an adequate operation for carcinoma of the stomach.

Theodore Billroth[1] made surgical history on January 29, 1881, when he performed the first subtotal gastrectomy with survival upon Theresa Heller. The photographic reproduction of the gross pathological specimen in Billroth's report revealed the extent of the lesion and the magnitude of the procedure. There were said to have been three malignant lymph nodes along the lesser curvature and the microscopic sections of the primary lesion showed an adenocarcinoma of the stomach with some colloid degeneration. Billroth restored the continuity of the gastro-intestinal tract by mobilizing the duodenal stump and suturing the gastric stump to the duodenum with thirty-three interrupted silk sutures, the Billroth I procedure. The operation lasted one hour and a half and the convalescence was uneventful. The skin sutures were removed on the eighth day and the patient was discharged at her own request on the twenty-second postoperative day. Her health failed rather rapidly and Mrs. Heller was readmitted four months later just prior to death which occurred in the hospital. Autopsy revealed metastatic involvement of the peritoneum at the level of the gastric bed and malignant involvement of retroperitoneal lymph nodes. Pean in 1879 performed the first gastrectomy upon a human but the patient died on the fifth postoperative day; Rydygier in 1880 carried out the second gastrectomy but this patient died within twelve hours' time. Billroth's second and third operations resulted in death. Thus among the first five patients with carcinoma of the stomach attacked seventy years ago by this new surgical procedure there was but one operative survival.

An interesting study was made by Dr. W. W. Welch of Johns Hopkins in 1886 who collected 37 resections for cancer of the stomach from the literature. Twenty-seven of these resulted in operative deaths, 10 survived with an operative mortality of 73 per cent. Even more startling is the fact that the 37 resections were carried out by 27 separate operators, 25 surgeons with one resection each, Billroth with 8 and his pupil, Czerny with 4 cases. Billroth had 5 survivals and 3 deaths, an operative mortality of 37 per cent; Czerny had 2 survivals and 2 deaths while among the remaining 25 surgeons with one resection each, only 3 patients survived, an operative mortality of 88 per cent. Reflection on these amazing statistics gave rise to six postulates that were later referred to as the "Welch Absolutes." Dr. Welch listed the following reasons why surgical excision was not a satisfactory method of control of cancer of the stomach:

(1) Distant metastases were present when the abdomen was opened.

(2) The anatomical site of the gastric tumor prohibited surgical removal.

(3) The extent of the gastric tumor prohibited surgical removal.

(4) Widespread adhesions (malignant?) existed between the stomach and pancreas and colon.

(5) The extreme debility of the patient prevented a surgical attack with subsequent survival.

(6) An operative procedure of this magnitude required a specially trained surgical team, which was rarely available.

All of these require thoughtful consideration today, are still essentially true and must be considered evaluated and corrected to assure a successful outcome in each instance.

During the past fifteen years the operation of subtotal gastrectomy has become popularized and is a procedure carried out daily in most of the busy hospitals. Indeed, the present resident staffs of many hospitals unfortunately use the total number of subtotal gastrectomies that they may be permitted to perform as a criterion of desirability for the residency! Many fail to appreciate the vast difference that exists between a gastrectomy for peptic ulcer and an adequate opera-

---

*Chairman's Address, Section on Surgery, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

*From the Department of Surgery, Washington University School of Medicine and Barnes Hospital, St. Louis, Missouri.

tion for carcinoma of the stomach. There must be a sympathetic and an intelligent understanding of the fundamental differences between the two procedures. For example, it is an established fact that until some fifteen years ago there were very few medical centers in the United States that could list as many as 100 curative attacks upon carcinoma of the stomach with survival. Many patients were explored, the diagnosis confirmed but those that were actually subjected to extreme resections for carcinoma with probability of a cure in mind remained an all important few. Several factors have entered the picture that have increased the rate of operations for carcinoma of the stomach. The improvements in anesthesia, the availability of blood, a better understanding of fluid balance, improvement in the clinical preoperative state of the patient, and the utilization of potent antibiotics, are but a few of the well known adjuncts that are available now. Equal emphasis must be placed upon the concepts and the results of the residency training programs that exist today. The American Board of Surgery has established certain standards for diplomates of their board. The Society of University Surgeons has recommended certain training programs to provide adequate surgical training in hospital centers. The American Hospital Association and others insist that active surgeons on the staffs of their member hospitals be certified either by the American Board or the American College of Surgeons before they are permitted to carry out surgical procedures. Last but not least is the current trend in the surgical management of peptic ulcers: the surgical removal of the acid-bearing portion of the stomach and the restoration of the continuity of the intestinal tract, which has caused some to attack malignant lesions of the stomach with impunity.

Diagnosticians and surgeons alike deplore the delays that present themselves in arriving at an early diagnosis of carcinoma of the stomach, and early diagnosis is not likely to improve because the symptoms are vague and varied and procrastination prevails among patients and physicians alike. Carcinoma of the stomach usually does not produce degenerative symptoms of sufficient severity to send patients to their physicians until the lesion is in an advanced stage. As recently as last month, Cooper[2] points out that the first factor coloring the mortality status in gastric cancer is "patient delay" and hopes that cytological diagnostic aids will be shortly available and practical which will result in early diagnosis. Even better education of the public seems to fail alerting the adults as a group to the diagnostic pitfalls of the symptomatology of carcinoma of the stomach.

Cuneo[3] first outlined the present type of radical gastrectomy with slight modifications in France in 1900. This was reemphasized in 1907 by Jamieson and Dobson[4] who presented the working model of the lymphatics of the stomach and whose plates are still used in standard anatomical texts. Jamieson and Dobson further felt that no operation for cancer of the stomach was a truly radical one in the sense that all the tributary lymph channels and nodes even of the primary type are removed. Coller and his co-workers[5] added substantially to our fundamental knowledge of lymphatic drainage of the stomach in 1943 and they designated four zones of lymphatic drainage corresponding roughly to the blood supply of the stomach: zone I, the inferior gastric or subpyloric; zone II, the pancreaticolienal; zone III, the superior gastric; and zone IV, the suprapyloric. They further emphasized the fact that there may be microscopic evidence of metastatic involvement in blood vessels even though gross evidence of metastases cannot be demonstrated and that there may be in addition filtration through the gastric wall with serosal involvement, a constant source of free peritoneal implantation. The richness of the lymphatic channels becomes more apparent after injection with dye and one sees that lymph returns in many channels forming a plexus about the vessels themselves.

It seemed to be enough in the early operations to have resected the growth and to have kept the patient alive during the surgical procedure, with perhaps some degree of palliation as the final objective. Lahey[6] pointed out in editorial comment recently that the operation most frequently carried out, the subtotal gastrectomy, is inadequate; that all subtotal gastrectomies inadequately fulfill the requirement for any operation for malignancy, the ability to remove the organ with the adjacent lymph bearing structures.

Thomson and Robins[7] recently studied the

incidence of local recurrences in gastric and duodenal stumps and the gastric beds in 28 patients who after a previous subtotal gastrectomy for carcinoma of the stomach had a postmortem examination. In their series, roughly 50 per cent showed gastric bed recurrence or twice as many as those showing gastric stump involvement, yet one group of questionable cases could have raised the gastric bed recurrence to 75 per cent and the gastric stump to 40 per cent. In a recent study of a similar nature carried out by McNeer[8] *et alii* in 92 cases, a higher incidence of gastric stump recurrences was found than of recurrences of the gastric bed alone. That gastric carcinoma directly invades the first portion of the duodenum was first pointed out by Castlemen[9] in 1936; additional evidence was brought to light by Coller, Kay and McIntyre[5] and recently again emphasized by Zinninger and Collins[10] of Cincinnati. All of these investigators were able to demonstrate duodenal involvement in roughly 25 per cent of their specimens with pyloric and prepyloric carcinoma. Zinninger and Collins believe that the line of gastric resection should be 2 inches above what one would consider to be safe and beyond all gross evidence of infiltration. McNeer and his associates[11] carry out a circular "frozen section" at the line of gastric division, and utilize the microscopic picture to provide them with an "adequate" level.

Although most collective statistics like to invite attention to perhaps 20 per cent survivals at a five-year level[12] more and more are raising the question as to why subtotal gastrostomy fails. Lahey[13] was one of the first to develop the more aggressive surgical approach to this problem and he has repeatedly raised the question as to whether total gastrectomy should be employed in early carcinoma of the stomach. He has pointed out that it requires courage and discrimination and increasing capacity on the part of surgeons to apply to patients with early cancer of the stomach the same principles that have been prescribed for lesions of the rectum and colon. It was felt that the smaller the lesion the more aggressive should be the approach because the better is the chance for cure. Lahey and his group[14] emphasized the reduction in mortality rates in total gastrectomies from the 53.4 per cent reported by Finney and Reinhoff[15] in 1927 on 67 patients in whom 58 per cent of the deaths were due to peritonitis, to their own figure of 9.4 per cent from 1944-50 in 64 total gastrectomies. The figure for the mortality of subtotal gastrectomy for malignant disease of the stomach from 1937 to July 1949 was 9.2 per cent, or roughly the same. Thomas, Waugh and Dockerty[16] who also have had wide clinical experience in this field feel that a mere philosophy of radicalism is not sufficient to prove that total gastrectomy is the treatment of choice in all carcinomas of the stomach. They feel that a better conception is the removal of all areas suggested by the known pathologic characteristics of a given malignant lesion. In evaluating the material in 147 cases from the Mayo Clinic they were unable to correlate the distance from the tumor to the incisional line and the duration of life.

All are agreed that gastric cancers do not look or behave alike. A total gastrectomy and a radical dissection of lymph nodes are not synonymous. Most are agreed that whether or not nodal involvement is suspected a careful subtotal gastrectomy should be carried out with thorough removal of every known area of lymphatic spread. What can we do to give the patient his best chance for a surgical cure? How can we best bring this about from a practical clinical viewpoint?

(1) *The first look, the early look.*—We as surgeons must emphasize the importance of the first look, the early look, in all adults with gastric symptoms that do not respond promptly to intelligent and adequate medical therapy. Even in the absence of abnormal roentgenologic findings in the hands of competent radiologists, these patients should be entitled to an exploratory laparotomy and appropriate emphasis should be placed upon the importance of this first look.

(2) *The appropriate incision.*—Carter[17 18] of Cincinnati has employed a combined thoracico-abdominal incision to provide adequate exposure in the upper abdomen since 1939. This procedure was described in detail in 1947 with particular reference to its employment in splenectomy and the literature with regard to approaches to the upper abdomen as reviewed. It was pointed out that this combined approach dated back to the last decade of the nineteenth century and was the

result of the efforts of Lannelongue and Micheli to gain a wider exposure for operations upon the cardiac portions of the stomach. When carried out to its complete extent it is possible to perform technical details of operative procedures with greater accuracy, it increases the safety factor, avoids excessive manipulation and tugging on the organs concerned and presents a wider margin for resection when dealing with malignant lesions. When the abdominal portion alone is used as in the initial stage of exploration, suitable retraction permits an adequate exploration of the entire abdomen and the thoracic extension is carried out only after the curability of the lesion has been established.

(3) *The adequate operation.*—After suitable induction, endotracheal intubation is performed and gas-oxygen inhalation anesthesia given, the lower sixth intercostal nerves are then blocked as described by Bartlett and Eastwood to assist in the relaxation of the abdominal wall and to provide freedom from postoperative discomfort. The left side of the patient is elevated on sand bags and the skin of the lower thorax and abdomen prepared and draped. An oblique abdominal incision is made from a point opposite the seventh left intercostal space downwards to cross the lateral margin of the right rectus muscle. With the upper abdomen thus widely opened through this generous modified transverse incision, exploration can be carried out and the size and extent of the lesion determined. Determination of the operability of the lesion is governed by the fixation of the stomach, the hepatic involvement, the regional lymphatic involvement, the presence or absence of peritoneal or pelvic implants, the fixation of the root of the mesentery, but before the decision is finally made the lesser sac must be opened, the head and body of the pancreas examined and the celiac axis palpated. The splenorenal group of glands must be investigated along with the greater omentum.

If the exploration reveals that curability is possible, the incision is extended into the seventh intercostal space (after dividing the costal margin and excising a small segment of the cartilage to prevent postoperative discomfort) and carried posteriorly nearly to the level of the transverse process of the vertebra. It is not necessary to resect the rib; a long incision is essential and if exposure is not adequate, the adjacent ribs can be divided at the level of the transverse processes. The lower left lobe of the lung is carefully retracted and the rib spreader inserted. The phrenic nerve is injected with procaine. The diaphragm is incised toward the esophageal hiatus and the triangular ligament of the left lobe of the liver is sectioned. This thoracico-abdominal incision is a most important factor in the planned attack on carcinoma of the stomach. Through the exposure provided by this incision and this incision alone, a block resection of the structures involved and the removal of the pertinent lymphatics under direct vision can be carried out as well as the restoration of the continuity of the gastrointestinal tract with a minimal amount of tension upon the suture lines. The operation will not be detailed but its extent indicated.

(1) The great omentum should be separated completely from the transverse colon by sharp dissection extending from the hepatic flexure past the splenic flexure exposing the pancreas and the spleen. Lahey has repeatedly emphasized this point.

(2) The duodenum must be mobilized and transected just proximal to the entrance of the common duct. This excision of the first portion of the duodenum provides additional insurance against the presence of carcinoma in the duodenal stump.

(3) The gastro-hepatic ligament should be excised with the stomach and divided flush with the liver.

(4) The celiac axis is dissected free, the gastric arteries are doubly ligated at their origin and the axis is freed of lymph nodes.

(5) The para-esophageal nodes must be removed with those at the celiac axis.

(6) The spleen should be rotated medially and the vessels ligated at about the midportion of the pancreas. They frequently traverse the superior border of this organ at this level.

(7) The spleen should be removed and rotated upward with the stomach along with the group of nodes between the greater curvature and the hilus of the spleen.

(8) The tail and the body of the pancreas should be elevated and resected almost to the mesenteric vessels. A V-shaped incision is made across the body to permit approxima-

tion of the anteroposterior surfaces, with interrupted silk sutures.

(9) Although the stomach is completely mobilized, I would prefer to leave a small portion of the fundus of the stomach if it can be done with cancer precautions to provide the site for the anastomosis between it and the jejunum.

(10) The continuity of the gastro-intestinal tract should be restored by anastomosing a loop of jejunum to the cardia of the stomach (if this remains). This loop of jejunum should be brought up anterior to the transverse colon and a small entero-enterostomy constructed between the afferent and efferent jejunal loops to assure adequate drainage.

(11) A "sump" pump should be placed to the pancreatico-lienal bed after the fashion described by Dr. Wangensteen.

The closure of the thoracico-abdominal incision is carried out in layers, the thoracic cavity is drained anteriorly and posteriorly with standard water seals, the diaphragm is carefully reconstructed with silk sutures and the abdominal wound closed using stainless wire[19] technic.

Two rather recent but exhaustive reviews should be included for the sake of completeness. Fletcher[20] in 1951 reviewed the present status of total gastrectomy in the treatment of gastric carcinoma and concluded that total gastrectomy was now a "fairly well standardized procedure with an operative mortality of 10 to 20 per cent." He concluded that the operation was specifically indicated in the treatment of "all operable gastric cancer the extent or location of which prevents adequate removal by partial gastrectomy." Fletcher did not feel, however, from his review of the literature that evidence was available to warrant the general adoption of total gastrectomy as the standard operation for all types of gastric cancer.

Everson[21] in September, 1952, in a monumental collective review of the subject of nutrition points out that in both the experimental animals and in the collected cases that had been subjected to subtotal and total gastrectomy, nutritional impairment occurred in a rather large percentage of patients although this was controllable by clinical alteration of the fat, protein and carbohydrate balance.

CONCLUSIONS

In conclusion let it again be emphasized that one should attempt to increase the number of effective cures for carcinoma of the stomach by carrying out an adequate operation for carcinoma of the stomach. It is felt that this can be accomplished by stressing several factors:

(1) The first look, the early look, should be made available to all adults with gastric symptoms which fail to respond promptly to medical management.

(2) A combined thoracico-abdominal incision as popularized by Beal and Longmire[22] offers adequate exposure to that area and is a valuable factor in the planned attack upon carcinoma of the stomach.

(3) An adequate operative procedure based upon established surgical pathological principles should consist of a block dissection to include the stomach and the duodenum down to the level of the common duct, the greater omentum, the lesser omentum or gastro-hepatic ligament flush with the liver and extending medially up to the hepatic artery, the spleen, the tail and a portion of the body of the pancreas with the retroperitoneal tissue and glands as far as the neck of the pancreas and the left gastric vessels and surrounding glands and areolar tissue surrounding the celiac axis.

(4) The continuity of the gastro-intestinal tract should be restored with an ante-colic gastro- or esophago-jejunostomy with entero-enterostomy.

REFERENCES

1. Pack, Geo. T.; and Livingston, Edward M.: Treatment of Cancer and Allied Diseases. Vol. 2. New York: Paul B. Hoeber, Inc., 1940.
2. Cooper, William A.: Patients, Physicians in Gastric Cancer. J.A.M.A., **150**:688 (Oct.) 1952.
3. Cuneo, B.: L'envahissement du systeme lymphatique dans le cancer de l'estomac. Gaz. de hop., **73**:125-127, 1900.
4. Jamieson, J. E.; and Dobson, J. F.: Lancet, **1**:1061, 1907.
5. Collier, Frederick A.; Kay, Earl B.; McIntyre, Robt. L.: Regional Lymphatic Metastases of Carcinoma of the Stomach. Arch. Surg., **43**:748, 1941.
6. Lahey, Frank H.: Total Gastrectomy for All Patients with Operable Carcinoma of the Stomach. Surg., Gyn. and Obst., **90**:247 (Feb.) 1950.
7. Thomson, Frank B.; and Robins, R. Edward: Local Recurrences Following Subtotal Resection for Gastric Carcinoma. Surg., Gyn. and Obst., **95**:341 (Sept.) 1952.
8. McNeer, G.; Vanbergh, H., Jr.; Donn, F. Y.; and Bowden, L.: A Critical Evaluation of Subtotal Gastrectomy for the Cure of Cancer of the Stomach. Annals Surg., **134**:2, 1951.
9. Castlemen, B.: Extension of Gastric Carcinoma Into the Duodenum. Annals Surg., **103**:348, 1936.
10. Zinninger, M. D.; and Collins, Wm. T.: Extensions of Carcinoma of the Stomach Into the Duodenum and Esophagus. Annals Surg., **130**:557, 1949.
11. McNeer, G.; Booker, R. J.; and Bowden, L.: The Resectability of Recurrent Gastric Carcinoma. Cancer, **3**:43, 1950.

12. Welch, G. E.; and Allen, A. M.: Carcinoma of Stomach, New Eng. J. Med., **238**:583, 1948.
13. Lahey, Frank H.; and Marshall, Samuel: Indications for and Experiences with Total Gastrectomy. Annals Surg., **119**:300, 1944.
14. Lahey, Frank H.: and Marshall, Samuel: Should Total Gastrectomy Be Employed in Early Carcinoma of the Stomach. Annals Surg., **132**:540-560 (Sept.) 1950.
15. Finney, J. M. T.; and Reinhoff, W. F., Jr.: Total Gastrectomy. Arch. Surg., **18**:140, 1929.
16. Thomas, Walton D.; Waugh, John M.; and Dockerty, Malcom D.: Prognosis of Gastric Carcinoma. Arch. Surg., **62**:137 (June) 1951.
17. Carter, B. Noland: The Combined Thoracico-Abdominal Approach with Particular Reference to Its Employment in Splenectomy. Surg., Gyn. and Obst., **84**:1019-1028 (June) 1947.
18. Carter, B. Noland; and Helmsworth, Jas. A.: Some Observations on the Use of the Combined Thoracico-Abdominal Incision. Annals Surg., **131**:687, 1950.
19. Walton, F. E.: The Prevention and Treatment of Wound Dehiscence. Arch. Surg., **57**:217 (Aug.) 1948.
20. Fletcher, Archibald G.: The Present Status of Total Gastrectomy in the Treatment of Gastric Cancer. Surgery, **30**:403 (Aug.) 1951.
21. Everson, T. C. Nutrition Following Total Gastrectomy. Surg., Gyn. and Obst., **95**:209 (Sept.) 1952.
22. Beal, John M.; and Longmire, Wm. P.: Use of Thoracico-Abdominal Incision for Upper Abdominal Neoplasm. Arch. Surg., **64**:609 (May) 1952.

THE DIAGNOSIS AND TREATMENT OF THE INFERTILE COUPLE*

By Fred A. Simmons, M.D.
Boston, Massachusetts

In the past ten years the American public has been made aware of the desirability of studying the man and wife in a problem of infertile marriage. For some reason the medical profession has taken longer than the public itself to appreciate this favorable attitude. Perhaps it is because doctors have not time to read the lay magazines regularly. At any rate one of my hopes today is to impress upon this group of men obviously so occupied in the healing of the sick that they cannot read lay publications or even the myriads of medical journals, the necessity of investigating both the husband and the wife when a couple complains of infertility.

Superficial questioning and examination are not enough to establish normality in this couple. A definite pattern of diagnostic steps must be carried out in its entirety, to make pregnancy possible in some cases, or to reach an irrevocable diagnosis of sterility in others. The average physician has not the time to explore the myriad pathways of these histories on the man and the wife separately, or to train himself to do the laboratory work or some other diagnostic maneuvers. Therefore, unless the family doctor is willing to acquaint himself with the correct type of history and examination to make, his best advice to the couple is to recommend them to an approved practitioner in sterility or to a clinic.

When faced with the problem of repeated pregnancies without viable children or in other words, the habitual aborter or multiple miscarriage case, it is even more important for the couple to be guided to hands where complicated laboratory maneuvers can be carried out and a detailed diagnostic survey made before another pregnancy is attempted.

As I outline and describe some of the diagnostic maneuvers it will be apparent that it is preferable for the doctor to observe these measures in a clinic before performing them himself. It will be apparent that many of the diagnostic tests are also therapeutic but it is proper to withhold definitive therapy in the form of medication or surgery until all of the diagnostic maneuvers have been completed and a tentative diagnosis has been arrived at.

Unless the husband is willing to cooperate to the utmost it is futile to study the wife in the average couple unless she complains of amenorrhea, or is known to have non-patent tubes, or some other obvious historical detail is elicited. It is a couple proposition and Meaker has shown that there are four or five factors which may be in either partner of the marriage which are pertinent in many cases of lowered fertility. We do not ordinarily recommend that a woman forty or over embark upon this diagnostic procedure. Yet, on the other hand, she is not to be denied the privilege if she is aware that the possibility of pregnancy is much less as the fifth decade starts.

We must ordinarily maintain an attitude of optimism and enthusiasm about these cases and not abruptly turn off the hopes of the couple if the husband presents himself with complete azoospermia or the wife has apparently non-patent tubes on her initial study. It is more important to rule out all obstructive phenomena exhaustively and to correct all reduced mechanisms of fertilization before one says the couple cannot have a child.

It is interesting to me that the majority of urologists of whom I have read or whom I have heard on this subject report that there

*Read in Section on General Practice, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

is little to do for the man with no spermatozoa at all. In a series of twenty-five consecutive cases of my own recently reported at the New York Academy of Medicine "Symposium on the Testis," it was an ironic fact that eight out of twenty-five men who had complete azoospermia are now fathers of their own normal living children as the result of operative or medical therapy. In a comparable group of twenty-five men complaining of oligospermia (or too few sperm) only two babies have resulted. Thus, it is not correct to consider a man with no sperm sterile until everything has been exhausted. It behooves the doctor to be very conservative in making a statement that the couple is irrevocably sterile and, in fact, it may be more diplomatic for him to refer the couple on to a higher source of diagnostic acumen before committing himself that the case is irremediable.

A diagnosis should not be made on any single test. If the results are not satisfactory the tests should be repeated. As in most laboratory reports, the clinical picture is more reliable than the laboratory. For years we have considered the lowest limit of normal in the number of sperm to be 60,000,000 per cc. In the last twelve months John MacLeod of Cornell University has just received the annual award of the American Society for the Study of Sterility for careful laboratory and statistical analysis of one thousand fertile men and almost one thousand so-called infertile men which showed that the numerical count may well be as low as 20,000,000 sperm per cc. yet the men remain normally fertile. In other words the critical level of normal is now 20,000,000 sperm per cc. instead of 60,000,000. I hasten to add, however, that it is not sufficient to do an isolated semen specimen, find 20,000,000 living sperm, and call the husband normal. The individual producing those sperm must also be studied as will be outlined promptly.

In the hope that most of you may already be well acquainted with the minimum diagnostic procedures in the female, I should like to turn our attention first to the husband who is often slighted by the urologist, the obstetrician and gynecologist, and often by the wife herself. Very few men will fail to accede to the doctor's request that they come in for examination if it is explained to them that the male is important in 33 to 50 per cent of infertile marriages in this country and that around 13 to 15 per cent of infertile husbands have no spermatozoa whatsoever. Often the physician is loathe to inform the man that he is without sperm. It has not been our experience that the average husband is particularly depressed by this discouraging fact once he realizes that it is not unique in him. I deplore the attitude of the majority of the medical profession that there is nothing much that can be done for the male anyway.

STUDY OF THE MALE

As the accompanying table will show *(Table 1)*, the husband must have a routine study consisting of a detailed history with particular reference to his occupation, premarital habits, marital habits, diet, habits of alcohol and tobacco, exercise or lack of it, congenital defects, operations, accidents, illnesses and even family history. In connection with this a complete physical examination should be carried out with particular attention to the external genitalia and the prostate gland. Search is made for excess hair or absence of hair, excess fat, or particular evidences of malnutrition and abnormalities of the endocrine status. Laboratory studies should include a urinalysis, complete blood count, Wassermann, examination of the prostatic fluid and semen and a basal metabolic rate.

In particular those occupations connected with the use of heavy metals may be danger-

ROUTINE MINIMAL DIAGNOSTIC PROCEDURES FOR HUSBAND

(1)	History and Physical Examination
(2)	General Laboratory Examinations
	Blood Wassermann
	Complete blood count, together with sedimentation rate if there is a high white blood count
	Urinalysis
	Prostatic secretion, fluid specimen, and stained smear
(3)	Basal Metabolism
(4)	Semen Examination
	Volume
	Motility
	Number of sperm per cubic millimeter
	Type and ratio of abnormal sperm

TABLE 1

ous, that is, lead, iron, zinc, copper, foundry work, plumbing, printing, painting, or industries in which contact with these heavy metal fumes is common. A group of occupations which may affect male fertility adversely is that which include taxi drivers, truck drivers, and travelling salesmen. These men spend long hours behind the wheel in a hot car with the heat of the motor rising toward them and with fumes containing ethyl gas, lead, or carbon monoxide. As a rule they are overdressed and are suffering from excessive heat to the scrotum. As Carl Moore pointed out years ago in animals, heat affects spermatogenesis adversely. Thus, individuals who lead sedentary lives, indoor lives, who are obese with fat pads around the thighs, men who wear skin-tight underwear which interferes with the thermo-regulatory mechanism of the scrotum, and very possibly more males in this part of the country than in the frigid New England States, may exhibit changes in spermatogenesis which may be attributed to the effect of heat on the germinal epithelium.

Any doctor can do a preliminary semen analysis which is adequate to determine whether or not the specialist's aid must be sought, if he will observe certain minimum requirements regarding the specimen:

(1) Five days or more of abstinence prior to examination.

(2) Clean, dry, glass container for collecting specimen.

(3) Examination for motility within 2 hours.

(4) Sperm count must be done, not just an estimate.

(5) Morphological study by stained smear.

(6) Complete semen study to be correlated with careful history and physical examination.

Normal semen must have a minimum of 3 cc. of volume with 40-60 per cent of spermatozoa actively motile two hours or longer, with a minimum of 20,000,000 sperm per cc. and with 50-60 per cent normal forms. I should still prefer to call the specimens between 20,000,000 and 60,000,000 doubtful and feel that special measures should be made to improve these counts. Often one specimen is partially spilled or incorrectly collected and this must be repeated.

If the individual repeatedly has more than 20,000,000 sperm he should still be advised relative to his habits of tobacco, alcohol, diet, exercise, coital habits, and so on. If the specimen is repeatedly 20,000,000 or below and does not improve on minimum forms of therapy, the patient is a good candidate for testicular biopsy. This is an exceedingly valuable diagnostic aid in determining which patient should respond to treatment and which ones will not. There are several oligospermic situations which do not respond to any therapy as yet devised. Occasionally these men will show marked hypospermatogenesis which indicates that they are manufacturing as many sperm as their germinal epithelium can produce. Others have arrest of spermatogenesis which indicates that the germinal epithelium is not functioning the way it should. Until the last twenty-four months there was no therapy for this diagnosis but Heckel and others have had results in treating these men with massive doses of testosterone. Unfortunately it has not yet been the writer's experience to have improvement following this program in patients with the above mentioned diagnosis.

Time does not permit further attention to the testicular biopsy except to refer to the technic in brief. There is an increasing number of papers each year on the uses of testicular biopsy.

My experience has not been rewarding in the use of hormones of any nature with the exception of thyroid by mouth in the infertile male. In fact, it is established that certain hormones may do more harm than good. Plain common sense will help the average husband more than drugs, again with the exception of thyroid. The chief measures indicated are in outline form as follows:

(1) Avoid alcohol, tobacco, caffeine, and sexual excesses.

(2) Regular hours of sleep, exercise, and work.

(3) Adequate protein and vitamin intake.

(4) Adequate thyroid intake (under supervision).

(5) Adequate vacation from business and social responsibility.

(6) Adjustment of local thermal environment.

(7) Occasionally, gonadotropin or testosterone therapy.

(8) Surgical testicular biopsy; epididymovasostomy; irrigation of ductus deferens; catheterization of ejaculatory ducts.

STUDY OF THE FEMALE

Turning our attention to the female partner of the infertile marriage, it is necessary

to follow a fairly routine program of minimal diagnostic procedures on the wife as depicted in *Table 2.*

(1) *History and Physical Examination.*— The initial interview should include a detailed history and routine physical examination without any special sterility maneuvers at this visit. The history must be complete and particular attention should be paid to the menstrual history as regards onset, duration, frequency of flow, amount of flow, presence or absence of pain, and any gross irregularities, the pre-marital and marital experiences as regards coitus or lack of it, the use or disuse of contraception, present and past occupations, habits, diet, past operations, accidents or illnesses. The types of medication which have been used and the treatment that may have been instituted before the patient reaches one's office must be recorded.

Physical examination must be complete with particular attention to the external configurations as regards distribution of hair, fat, development of the breasts, and external genitalia, and of course, must include a thorough pelvic examination.

During this first interview it should be pointed out to the patient the need and desirability for carrying out a tubal patency test, endometrial biopsy, post-coital examination of the cervical mucus and the recording of the basal body temperatures. In addition, the reasons for basal metabolic rate determinations, complete blood count and urinalysis may be explained. At this time the patient's menstrual calendar is consulted and an appropriate time selected for a test of the tubes which is usually done about day 10 to 14 of a 28-day cycle. The test should not be done too close to the preceding menstrual period nor after the presumed date of ovulation in case it may interfere with an early pregnancy. If the test is carried out too close to the onset of menstrual flow it is technically possible that endometrium may be blown through the tubes into the peritoneal cavity. It is a test designed to demonstrate patency of the fallopian tubes and is, in its execution, a surgical maneuver. It is best carried out during the ovulatory phase and should not be carried out in the presence of infection of the vagina, cervix, uterus, tubes or pelvis. The technic can be found in any good monograph on female sterility but should not be practiced until the operator has seen it done in an approved clinic or preferably has executed some tests under supervision in an approved clinic. There is reasonable proof that in the proper hands more pregnancies result from repeated tubal insufflations than from routine tubal plastics done intra-abdominally. Authors have reported as many as 41 per cent of non-patent tubes which became patent after repeated insufflations, with resulting pregnancies in 18 per cent of cases. It is our experience that tubal insufflation with carbon dioxide gas is preferable to uterosalpingography and should always precede it with one or two examinations. Air should never be used, as all the fatalities reported from this diagnostic maneuver have occurred when that medium was employed. Carbon dioxide gas is relatively safe. Some authors recommend that the patient should have both uterosalpingography and tubal insufflation since neither is superior and they are complimentary.

The technic of opaque media examinations is more complicated and strict asepsis must be observed. For purposes of the present discussion it should be pointed out that the margin of error is great here as the films are usually read by roentgenologists who are not familiar with the patient's pelvis or the technic of the procedure. It is certainly advisable

ROUTINE MINIMAL DIAGNOSTIC PROCEDURES FOR WIFE

(1)	History and physical examination
(2)	General laboratory examinations
	Blood Wassermann
	Complete blood count, including sedimentation rate if there is a high white blood count
	Urinalysis
(3)	Basal metabolism
(4)	Tubal insufflation
(5)	Endometrial biopsy
(6)	Miscellaneous diagnostic tests
	Intracervical post-coital examination
	Incompatibility test with cervical mucus and semen
	Cervical smear, gram stain
	Vaginal hanging drop and stained smear
(7)	Ovulation timing
	Endometrial biopsy
	Basal body temperature

TABLE 2

to interpret these films with great conservatism, and when in doubt they should always be followed by repeat carbon dioxide insufflation to establish that the tubes are still patent. There are, of course, some patients who do not conceive until both maneuvers are carried out, and patients who do not conceive after both have been proved satisfactory.

Endometrial Biopsy.—The removal of a strip of endometrium under aseptic conditions from the endometrial cavity at the onset of menstruation is termed an endometrial biopsy. This tissue is sent to the laboratory for microscopic studies to determine whether or not ovulation has occurred in that particular month. Occasionally tuberculosis is diagnosed by this method and rarely carcinoma has been reported. If the tissue reveals normal secretory endometrium (or the effect of progestin on the endometrium), ovulation is assumed to have occurred. If the endometrium is proliferative or preovulatory despite the tissue's being secured on the twenty-sixth or twenty-eighth day of the cycle, ovulation is presumed *not* to have occurred. This maneuver is essentially a miniature diagnostic dilatation and curettage and undoubtedly carries with it some salvage in infertile couples because it does dilate the internal os and it does remove some tissue from the endometrial cavity. This may release Smith's "menstrual toxin" which has a favorable effect on the ensuing menstrual cycle. It requires, of course, a trained pathologist to read the proper dating of this endometrial tissue. It is however a definite test for ovulation. Since 4 to 10 per cent of normal menstruating women complaining of infertility have anovulatory cycles its importance is obvious.

Post-Coital Examination of the Cervical Mucus.—The Sims-Huehner test first popularized in 1913 (but introduced as early as 1856) evaluates the presence or absence of living male spermatozoa in the cervical mucus, and their survival in the secretions of the cervix. It is best carried out at the time of ovulation approximately 14 days before the date of the expected period and preferably within two to sixteen hours after intercourse in the absence of any douche or other medication. The cervix is exposed with a speculum and a loop-full of mucus is removed for examination under the microscope at once. A normal test should have 15-50 actively motile sperm per high power field although the finding of one live sperm indicates a positive test. It is not a sufficient assay of the husband to limit one's examination to the presence of spermatozoa in the cervical mucus of the wife, and it is never a substitute for semen analysis.

Basal Body Temperatures.—The daily recording of a waking temperature on a planned graph correlated with the date of onset of the menses is a fairly reliable method of determining the presence or absence of ovulation. It also tells us when the couple have timed coitus to fertilize an ovum at ovulation or when they have deliberately missed it either inadvertently or by misunderstanding directions. I have seen individuals whose doctor in good faith told them the most fertile time was just before or just after the menstrual period, when it is in fact, fourteen days before the next menstrual period is due. I have had patients who were told to have intercourse every night during this cycle when it is pretty well established that the male's spermatogenesis does not recover to a normal level for about thirty-six hours after one ejaculation. This might hinder fertilization because the sperm of a man producing them are in a state of chronic exhaustion. The temperature is taken daily at the same time every morning, and oral temperatures are satisfactory. Rectal thermometers are not necessary and intravaginal temperature recordings are not advised because of the danger of losing the thermometer in the bladder, if the urethra is mistaken for the vaginal canal.

The temperature will vary moderately, usually less than half a degree, until the date of ovulation when there is a distinct drop of a half degree or more followed the next day by a rise of more than that half a degree. The temperature remains elevated during the second half of the cycle dropping somewhat when the next menses start. If pregnancy ensues the drop will not be apparent and a continued elevated temperature suggests pregnancy. This test is sometimes called the "poor man's Friedman's test."

A simple graph can be constructed on graph paper with the days of the month on the top and the degrees of temperature in tenths on the left. Suitable symbols to indi-

cate intercourse and other findings may be recorded. It is possible to record intermenstrual bleeding or an increased clear discharge which may indicate ovulation on the day it occurs, on the chart. Occasionally discomfort in the breasts is a precursor of menstruation and begins fourteen days before flow.

For the past several years temperature recordings have enabled the experienced doctor to interpret not only normal bimodal curves as adequate evidence of satisfactory ovulation but also to interpret "poor curves" as good evidence of failure of ovulation. Frequently the abnormal curves indicate some deficiency of the progestational phase, which is not uncommon in lowered fertility. In females who have amenorrhea, hirsutism and obesity, where the ovaries are palpable in one or both vaults, abnormal temperature curves help to make us confident that the patient has bilateral polycystic ovaries which may respond to wedge-shape resection, with a fertility salvage of as high as 60 per cent.

This does not mean that all patients should come to surgery and it is best to have another gynecologist confirm this opinion before offering such elective surgery.

Treatment of the Female.—Many of the diagnostic procedures mentioned above are in fact treatment of the female. Sufficient pregnancies have followed routine insufflation of the tubes or endometrial biopsy or any instrumentation of the cervical canal to imply that the moderately infertile female may respond to instrumentation of the cervix or uterus. In patients who have cervical diseases or chronic endocervicitis judicial cauterization of the cervix may be carried out. If the cervix is markedly stenosed, repeated dilatation is necessary. Retroversion of the uterus requires manual replacement and the use of a Smith-Hodge pessary for two or three months. Occasionally these patients come to surgery if the uterus is adherent and fixed and cannot be replaced manually or under anesthesia. Non-patent tubes may respond to repeated insufflation and occasionally may require surgery. There is some promise that the use of polyethylene tubing may help to keep the diseased tubes patent, whereas the salvage to date has been very poor, perhaps 20 per cent or less.

A low metabolism should be corrected by adequate thyroid. Poor nutrition is treated by adequate diet and control of adverse habits such as excessive tobacco, alcohol, and coitus by gentle but firm restriction. Obesity should be relieved and malnutrition should be overcome.

In couples with the history of repeated pregnancies without living children much more attention must be given to the external circumstances in which the couple exist as regards their exposure to toxins. It is wrong to urge patients to give up after three or four miscarriages for even such an unfortunate as an individual with a bicornate uterus may respond to careful therapy either with hormones or surgery.

When the wife is fertile and the husband irrevocably sterile according to this outline, a child may result from artificial insemination using an anonymous donor. Carey in New York prefers to call this program semi-adoption which it really is and there is considerable satisfaction in those patients who have elected to have a child by this means, the salvage being as high as 80 per cent in some cases. While there are moral and religious protests to this scientific solution of husband sterility, no legal barrier to its use has yet been demonstrated in this country.

SUMMARY

An attempt has been made to show that routine minimal procedures on the husband and the wife, most of which are therapeutic as well as diagnostic, will give a salvage rate of possibly 40 per cent of couples studied. Seemingly insurmountable obstacles such as azoospermia or non-patent tubes have at times responded to appropriate therapy.

The couple should not be told that the situation is hopeless until everything has been exhausted; yet on the other hand, there are couples who would do well to cease this vigorous investigation for mental, moral, physical and financial reasons. It behooves the doctor to select those patients on whom an all out effort is to be made to cure infertility, with good judgment.

The indiscriminate use of hormones and vitamins is decried. There is an opportunity for considerable investigation in this field to be carried out in well equipped diagnostic clinics and teaching centers where research facilities are available. Neither partner should be denied the opportunity of these

studies. The wife should not be subjected to operation unless a complete assay of her husband has been made and therapy has restored him to normal limits.

The scope of this paper does not include the detailed technics available. Most standard references on sterility include the fine details and more than one should be consulted as there is considerable contradiction in the efficacy of various therapeutic manœuvers and diagnostic steps.

UTERINE CURETTAGE, ITS DEVELOPMENT AND USE*

By CURTIS J. LUND, M.D.
Rochester, New York

Uterine curettage as we know it today represents a fusion of two basic lines of medical development, a union of technical skill with knowledge of gynecologic pathology. From the technical point of view three obstacles had to be overcome: exposure of the cervix, dilation of the cervix and exploration of the uterine cavity. No one person can be given credit for originating these individual procedures but one man, Joseph Claude Anthelme Récamier, combined at least two of these three into an operation which he called uterine curettage and so established one of the foundations of modern gynecology.

History suggests that Récamier did not originate any of these mechanical procedures. The vaginal speculum is as old as the trephine. The cylindrical form was described and used by the Hebrews, Greeks and Arabs. The branched or bladed form was Latin in origin and excellent examples were found in Pompei. Although Récamier is generally credited with the reintroduction of the speculum this may not be entirely correct. Deneffe[6] in his history of the speculum said:

"I believe not without some prejudice, that Dionis in 1707, Scultet in 1712, Garengeot in 1727 and Petit in 1774 all wrote about the use of the vaginal speculum; and that Récamier ignored the work of his predecessors and believed that he invented the instrument especially for his purpose."

However, certainly it was Récamier[7] who began systematic use of the vaginal speculum in 1801. By 1825 he had split the cylindrical speculum to form two blades. Mme. Boivin, working independently and simultaneously, attached a handle and screw on the right so the vaginal end could be widened. The rush was on and in an unbelievably short time hundreds of variations were introduced, naturally under the name of the individual physician. The credit which belongs to Récamier is not that of an inventor but that of recognizing the value of what was well known but not appreciated.

The curette was first described by Garengeot in 1723 as a scoop-like instrument for scraping wounds. (It was he who described the use of the speculum in 1727.) However, again it was Récamier who made the first serious gynecologic application. In 1843, he attached a small scoop shaped spoon to a long handle and used it to scrape "fungous growths" off the uterine mucosa. Before this time the uterine cavity was a space entirely closed to investigation and local therapy, unless by chance the cervix was greatly dilated by disease.

Cervical dilation was practiced in antiquity as a means of producing abortion. The various dilators made of wood, bone, and ivory have been described since the time of Hippocrates. Similarly the use of dried vegetable products such as sponges, bark and other hygroscopic materials were known to the ancients. Sir James Y. Simpson[9] has been given the major credit for the reintroduction of cervical dilatation. In his textbook Thomas[11] said:

"Even to him [Récamier], however, the diagnosis of diseases within the cavity, when the os was closed, was an impossibility, and for the means of combatting this difficulty we are again indebted to Dr. Simpson, who, in 1844, placed the use of the sponge-tents among the most important of our resources for diagnosis."

For many years thereafter cervical dilatation was most often accomplished by tents of sponge or sea-tangle (laminaria digitata) that expanded when wet. These were placed in

---

*Chairman's Address, Section on Gynecology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

*Dr. Lund was elected Chairman of the Section on Gynecology at the annual meeting of the Southern Medical Association in Dallas, Texas, November 1951, at which time he was Professor of Obstetrics and Gynecology, Louisiana State University School of Medicine, New Orleans, Louisiana. On September 1, 1952, he became Professor of Obstetrics and Gynecology, University of Rochester School of Medicine and Dentistry, Rochester, New York.

*From the Department of Obstetrics and Gynecology, The University of Rochester School of Medicine and Dentistry, and Strong Memorial Hospital, Rochester, New York.

the cervix and uterus and would accomplish dilatation within a period of 24 hours.

The invention of the uterine sound has been attributed to Récamier also, but it has been established that Samuel Lair in 1828 advocated the use of the sound to explore the uterine cavity. It was not adopted upon his recommendation and not until the year 1843 was it generally accepted. T. Gaillard Thomas said in his text of 1880 that the sound was simultaneously used

"by Simpson of Edinburgh, Hugier of Paris and Kivish of Prague, working without concert. To Simpson certainly belongs the credit of having forced it upon the attention of the profession and established its value by clinical evidence."

In spite of the fact that Récamier[3 12] did not invent the speculum, the curette, the sound or cervical dilatation, he did establish uterine curettage as a therapeutic procedure. He was born on November 6, 1774, at Rochefort-en-Bugey in the Ain department. His family background was excellent and from it had come many men in the professions of law, medicine, state and clergy. Anthelme, as he was called, received much of his early education from an uncle who was the curate of a nearby parish. From this devout man he learned not only classic disciplines but also disciplines of character which he exhibited throughout his long life.

Récamier's father was a notary, a highly respected man in the community, and hoped that his son might become a lawyer and succeed him. Consequently young Anthelme was apprenticed to a lawyer. However, this lasted but a short time when he forsook law for medicine. This time his preceptor was his uncle and namesake, the chief surgeon of the Belley hospital. After a suitable period of study he went for a short time to the hospital in Bourg where he came directly under the influence of the great French anatomist, Bichat. By this time Récamier was eligible for military service and became a medical officer in the French navy. After a period of grim shore duty at Toulon complicated by starvation, typhus and pestilence he was assigned to ship duty as the second medical officer. Shortly thereafter the British forced his ship into surrender and Récamier was taken prisoner. After release from prison and discharge from military service he went to Paris and matriculated in the School of Health. Two years later, at the age of 25 he successfully passed his examinations, was awarded a medical degree and began duty as assistant physician at Hotel Dieu. Within two years (1801) he had produced his first model of the vaginal speculum and he began to use it systematically in the inspection of the cervix. By 1816 he had enlarged the diameter of the instrument so that he could inspect a patient with cervical malignancy. The speculum was of great value to him in his study and interest in this tumor. He attempted therapy by means of cervical amputation and later by vaginal hysterectomy and his was the distinction of being the first Frenchman to do this operation successfully in 1829.

In addition to his clinical activities Récamier became active and well known in professional circles. In 1807 he was appointed chief physician of Hotel Dieu and in 1820 he became one of the founding members of the Academie de Medecin. Because of basic interests and ability in teaching he was appointed professor on the Faculty of Medicine in 1821 and at the age of 52 succeeded Laennec in the chair of medicine at the College de France. The invention of the uterine curette was one of the last major contributions of Récamier and came when he was 70 years of age. He died at age 78 in 1852.

Hostility toward the use of the curette was general for years. The French were divided. Rouger in Paris, Goldschmidt in Strasbourg, as well as Robert, Trousseau and Nelaton used the curette but strong resistance was made by Velpeau, DuBois and others. In 1866, twenty years after Récamier described his instrument, Marion Sims introduced his model. Sims'[10] curette was made with an open sharp steel blade and a flexible handle. Six years later (1872) T. Gaillard Thomas[11] introduced the dull curette made of flexible copper wire. These two models are the direct prototypes of the curettes in general use today. The curette is the only gynecologic instrument which has undergone little or no modernization and modification. Publications and indorsement by Sir Charles Locock, Sir James Simpson, and Fleetwood Churchill in Britain and Sims and Thomas in America finally established the operative procedure. The mechanistic features of uterine curettage were dependent upon the genius and skill of

three famous gynecologists. Récamier, the founder of gynecology, improved the powers of examination by exposing the cervix and in certain cases scraping its investing membrane. Simpson made the second basic contribution by opening the body of the uterus to investigation and Sims, the founder of American gynecology, by combining and simplifying both technics into a simple, complete and satisfactory procedure.

Until this time (1875) the curette was essentially a therapeutic tool advised usually as a procedure of last resort in management of uterine polyps, and fungosities or fungous degeneration of the endometrium. Thomas, in his book published in 1869, describes the speculum, the sound and dilators of the cervix as diagnostic instruments. But, he said, if

"fungous degeneration be clearly diagnosed, and not surmised, then the whole mucous lining of the uterus should be scraped gently by one of the curettes."

Simpson in 1872 suggested its employment when

"inflammation has affected mainly the lining membrane, leading to its permanent thickening, it may sometimes be desirable to scrape off portions of it with Récamier's curette."

Diagnostic curettage, however, was still unknown. It is true that many of the early investigators attempted to recognize the underlying disorder by the consistency and shape of the curettings and some even used the hand lens. Nevertheless the full value of diagnosis was not to be realized until Virchow introduced his theory of cellular pathology. As Récamier had placed the proper instruments in the hands of the surgeons so did Virchow place the miscroscope in the hands of the pathologists.

In 1874 Hegar, Kallenbach and Olshausen introduced the curette to the German profession. (It had previously been used in Germany by Simon for cervical cancer.) The Germans were far advanced in microtechnics so it was natural that they should establish the first union of the curette and the microscope. Pathology had moved forward rapidly but a decided apathy existed among gynecologists which prompted Thomas to make the following observation in 1880.

"Nothing more decidedly retards the progress of gynecology, lowers it as a special study in the eyes of the sister departments, and fans the dying flame of prejudice with which it has been able successfully to contend only during the past half century, than the unsettled state of uterine pathology. In gynecology, this whole subject presents the melancholy aspect of uncertainty and dissension. As a result of this state of pathological confusion among the leading minds devoted to this department, every newly-fledged specialist feels warranted in elaborating and maintaining a theory of his own. No pathologist claims that hepatic, or cardiac, or renal disease always has the same pathological origin; why should any one expect to find for uterine disorders a universal pathogenic factor?"

During the next 25 years there was rapid development of diagnostic curettage. The impetus for modern microscopy came from the Germans so it is natural to expect that they would lead the way in the microscopic diagnosis. The first disease to come under microscopic scrutiny was "uterine fungosities," known from the time of Récamier. From the history of these patients and findings at curettage there is little doubt that the disease earlier described was endometrial hyperplasia. However, placental polyps, uterine polyps and no doubt, incomplete abortion were most certainly included as the same disease. In 1869 Thomas advised scraping the uterus for treatment of menorrhagia associated with fungous degeneration of the uterine mucosa. For years this condition had been described under the heading of metritis so it is logical that microscopic discovery of inflammatory cells in the endometrium should lead to a diagnosis of endometritis. Olshausen and his associates in 1875 described the microscopic pattern of endometrial hyperplasia and apparently understood that it was not infection or inflammation but continued to call it endometritis. In 1880 T. Gaillard Thomas quoted Delafield in describing uterine fungosities as

"hypertrophied elements of mucous membrane, dilated follicles, enlarged blood vessels and exaggerated cell growth."

Brennicke in 1882 suggested that the ovarian follicle was the cause of endometrial hyperplasia and called the condition endometritis hyperplastica ovarialis. Subsequently several German investigators added to the basic information of the syndrome. Of particular interest was the contribution of Cullen[4,5] of Johns Hopkins. Independently, in 1900 he called attention to an interesting condition of the endometrium with which bleeding was always associated. This he designated as endometrial hyperplasia, a term which was suggested by William H. Welch. In succeed-

ing years Cullen was instrumental in abolishing the routine diagnosis of chronic endometritis by a study of 1800 specimens from uterine curettage in which he found only 48 with true inflammation.

Most of the writers between 1875 and 1900[1,2] suggested that bits of tumor tissue might be removed from the uterine cavity with a curette or spoon for the microscopic diagnosis of cancer. Little mention was made of uterine curettage for the diagnosis of cancer until after 1900. Winter and Ruge[13] in 1909 said:

"When the diseased tissue is not accessible to the eye or palpating finger, a positive diagnosis may be made with the microscope. It is an auxiliary method to be used when all other methods fail."

Only 45 years ago did the first publication dealing with the normal cyclic changes of the endometrium appear, the well known paper of Hitschmann and Adler. The story of the endometrium was completed by Schroeder[8] in his monumental work on the histology of the endometrial cycle. Once the normal had been established it became possible to determine abnormalities. Just as certainly as the earlier investigators had recognized the relation of the abnormal follicle to endometrial hyperplasia, now it was possible to recognize abnormalities of the corpus luteum and from the studies of Robert Meyer and others the histologic and clinical features of irregular ripening and irregular shedding of the endometrium were established. One of the important diagnostic features of irregular shedding of the endometrium was and is the application of curettage to the bleeding phase. There is certainly nothing illogical about timing the procedure to coincide chronologically with the abnormality as is the rule, for example, in the application of electrocardiography to cardiac arrhythmias. Many physicians still fail to obtain full diagnostic value from uterine curettage in the so-called "functional bleedings" because of poor timing. When malignancy or other disease is suspected timing is of less importance.

Others fail to get full diagnostic value because they do not practice fractional or differential curettage. This is very simply done by first curetting the cervical canal and holding this specimen separate from the succeeding endometrial curettings. In this manner small cervical cancers are not lost in the mass of endometrial tissue. Every year for the past ten we have discovered at least one early unsuspected cervical carcinoma by differential curettage.

Uterine curettage today has manifold diagnostic and therapeutic uses familiar to all who practice gynecology. In some parts of the country curettage is used too quickly and too often as a substitute for a careful menstrual history and pelvic examination but may not the same be said of oophorectomy or hysterectomy? As the scalpel, the electrocardiogram, the x-ray and the antibiotic can be abused and misused, so can the curette. In other areas of the country early uterine cancers are still being overlooked by many physicians who fail to employ the curette. Somewhere between these extremes lies the rational use of uterine curettage in the practice of modern gynecology.

REFERENCES

1. Baldy, J. M.: An American Textbook of Gynecology. Philadelphia: W. B. Saunders Company, 1894.
2. Barnes, R.: Diseases of Women. Philadelphia: Henry C. Lea, 1878.
3. Castiglioni, T.: History of Medicine. New York: Alfred Knopf, 1941.
4. Cullen, T. S.: J.A.M.A., 41:367, 1903.
5. Cullen, T. S.: Trans. Am. Gyn. Soc., 33:298, 1908.
6. Deneffe, V.: Le Speculum de la Matrice. A Travers Les Ages. Antwerp: H. Caals, 1902.
7. Ricci, James V.: The Development of Gynaecological Surgery and Instruments. Philadelphia and Toronto: The Blakiston Company, 1949.
8. Schroeder, R.: Arch. F. Gyn., 104:27, 1915.
9. Simpson, Sir James Y.: Clinical Lectures on the Diseases of Women. Edinburgh: Adam and Charles Black, 1872.
10. Sims, J. Marion: Uterine Surgery. New York: William Wood and Co., 1873.
11. Thomas, T. Gaillard: Practical Treatise on Diseases of Women. Philadelphia: Henry C. Lea, 1869 and 1880.
12. Traut, H. F.: West. J. Surg., 56:178, 1948.
13. Winter, G.; and Ruge, C.: Gynecological Diagnosis. Philadelphia and London: J. B. Lippincott Co., 1909.

MEDICINE IN THE SMALL TOWN*

By PAUL WILLIAMSON, M.D.†
Memphis, Tennessee

Most considerations of American medicine have been purely from the standpoint of the increasing service rendered in urban medical centers. Only in the past four or five years has there been much discussion regarding medicine in the small town and what can be done to improve it.

The shortage of physicians that exists currently is principally a shortage of general

*Received for publication April 24, 1952.

†Director, General Practice Program, University of Tennessee College of Medicine, Memphis, Tennessee.

practitioners. Those in training for the specialties and those already in practice are nearly sufficient to meet all the needs of specialty medical services. But there is a major shortage of general family physicians, particularly in rural areas. This is most probably due to the fact that young men know very little about small town medicine. All of their training is based on urban medicine and practically all of their teachers know nothing about rural medicine.

In order that the young man may take up small town practice with an increasing insight into what the small town doctor does, he must be given more contact with the well trained and conscientious family physician. As a means of doing this, the University of Tennessee, in 1951, inaugurated an undergraduate general practice training program. As the first step in such a program, a staff of general practitioners was brought into the medical center and given equal rank and equal position with the various other staffs. The duties to which this group of men are assigned are analogous in all respects with their duties in a small town community. Approximately one-fifth of the outpatient care done by the medical center is done through a general practice clinic in which senior medical students are allowed to do a general family practice of medicine with the advice and counsel of members of the General Practice Staff.

The General Practice Clinic in which this work is done is equipped as a self-contained unit. It has its own x-ray, laboratory and technician, minor surgery, physiotherapy, basal metabolism room, and so on, and the young men are encouraged to use this equipment in so far as they think they are capable. The majority of patients seen by this clinic are carried through their entire treatment in the clinic with a referral percentage of five to eight per cent. Patients are in no way selected but are brought into the general practice clinic exactly as they come into the door of the outpatient department.

In addition, each student, as he begins his clinical training in medicine, is allowed to pick one or two families and to subserve the functions of the family doctor throughout this entire training period under the supervision of the general practice staff. In this service, the student sees the patient in the outpatient department, makes home visits when necessary and follows closely hospital admissions of the family he serves. His duties encompass the exact duties of the family physician and he is encouraged and told to use his own judgment in as many cases as is feasible.

As a service to young men, the general practice office maintains a location file and takes an active part in trying to see that young physicians are properly located in small towns. This is carried to the point that one of the members of the staff goes with them if desired, meeting the people and discussing the problems of the young doctor setting up a practice and helping him in any way that he may request to get a good start in the general family practice of medicine. We believe that this location service is unique in that it is carried out from an active standpoint and not by correspondence. The service is not an official service of the University of Tennessee but has been done by the General Practice Staff simply to encourage young men who may be interested in taking up a position of a family doctor as his life's work.

Active postgraduate training for general practitioners is now available through the General Practice Staff. Again, taking a new point of attack, courses have been arranged in such a way that there are no, or very few, lectures, and that the trainee is expected to do active work at approximately the resident level during his postgraduate course. Each morning is spent in the specialty department of his choice (and this is arranged on an individual basis) while afternoons are spent in the General Practice Clinic with active teaching experience for the trainee as well as active medical practice. Evenings are spent in the emergency and admitting rooms of the hospital which are supervised by the General Practice Staff. The course has been set up as a free postgraduate course and is fully accredited by the American Academy of General Practice. To repeat, it is arranged on a purely individual basis, an effort being made to see that the postgraduate student gets the experience and the instruction which he believes will fit best into his own practice.

These functions of the General Practice Staff of the University of Tennessee are listed to show one attack on the problem of getting more doctors in small town medical practice.

Unquestionably, there are many other ways to attack the problem, all of them satisfactory to some degree. It is our hope that other universities will devise similar programs and that the family general practitioner may assume his rightful place as a colleague in all fields of medical practice.

DEVELOPMENTS IN PUBLIC HEALTH IN THE SOUTHERN UNITED STATES*

By W. L. TREUTING, M.D., M.P.H.†
New Orleans, Louisiana

Health has been and will continue to be of major interest to people, the interest perhaps increasing with expanding social organization. When individuals get together even in small groups they are very likely to discuss health: their own, or their neighbors,' or the general topic. Organizations whose primary objectives may be far removed from health frequently organize and operate health projects. This is true not only in large urban centers but in rural regions as well. Health has become a matter of vital concern to all of us and this concern is being reflected in the interest of government and politicians. Our responsibility as physicians and public health workers is in recognizing problems as they arise, evaluating them as to current and future importance, and instituting measures to meet them. Our present actions and thoughts are tempered by past experiences and developments and, lest we be guilty of action on the basis of expediency, the future must be kept in mind.

This essay is intended as a review of some developments over the past half century that have had a bearing on public health then and now. It is not a recital of accomplishments in disease control but rather a listing and brief discussion of those things which have affected the present status and will influence the future.

The past half century has witnessed profound changes in our country. During that time there have been two World Wars from which the United States has emerged as the leader of the world. More important and as a result of these wars directly and indirectly our technological advances have been amazing and industrial expansion tremendous. The Southern states are participating in this expansion and advancement to as great or a greater relative degree than are other sections of the country. From a predominantly agricultural economy there is emerging a booming industrial economy. This change was probably due and coming but the wars undoubtedly have hastened it.

A remarkably rapid movement of population from rural to urban areas has occurred in the South. In the sixteen states that comprise the region of Southern Medical Association membership, the urban population has grown from 19.1 per cent of the total in 1900 to 48.7 per cent in 1950. For the United States as a whole the proportions were 39.7 per cent in 1900 and 64.0 per cent in 1950. This movement has accompanied industrialization of the area and has occurred concomitantly with the improvement and mechanization of agricultural methods. The exact causal relationship will not be discussed here. Of importance, however, has been the fact of urbanization with its associated problems of aggregation of people and the coincident organization and facilities to meet them; also, improvement in agriculture and its resultant improvement in living conditions in rural areas.

Technological advances have occurred in the field of medical science. The armamentarium of the physician of today is vastly better than that of his father and grandfather. Modern science has developed new drugs and biologicals far superior to those known before. Further, stimulated by war periods, it has developed means of producing them in large quantity so as to bring them within the reach financially of most of our citizens.

Educational facilities have increased and improved so that more persons are now able to acquire more knowledge. This advance in education while important as a factor in the general raising of living standards has also aided in increasing the general awareness of matters of health and community organization to meet problems. An expression of this is the phenomenal growth in recent years of acceptance of the idea of spreading the cost

---

*Chairman's Address, Section on Public Health, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

†Professor of Public Health Administration, Tulane University School of Medicine, New Orleans, Louisiana.

of illness. Hospitalization insurance and surgical insurance organizations have grown in membership. Much of this growth, true, has gone along with urbanization and industrialization, but rural areas have more recently participated as well. This growth, especially in rural areas, would not have occurred, however, were it not for the provision of facilities. Community hospitals have been constructed in areas which previously had none or inadequate ones, being financed by local, state and federal governmental funds or with funds raised by local subscription. The initiative in this has mostly been with the locality.

The accomplishments in health in the South can be attributed in large part to the general improvement in living conditions resulting from industrialization and technological advances and community organization to meet health problems. A development of this fifty-year period of significance in health and a product of community organization has been the county health department. While health services, principally communicable disease control, had been operative in cities since colonial days, their extension to rural areas has been a development of this century. The real stimulus to county health department organization came in 1910 and ensuing years from the work of the Rockefeller Sanitary Commission in eleven Southern states. While primarily devoting itself to the control of hookworm disease, one of the stated objectives of the commission[1] was

> "If possible to help lay the foundation of a state and local health service that should in the end take care of hookworm infection and all other preventable diseases."

We can attest the achievement of that objective.

A second great stimulus to the county health department movement came in 1935 with the passage of the Social Security Act, through which federal funds became available for the expansion of state and local health services. One result of this, through the matching provisions of the grants, has been increased appropriations of state and local funds. A second important result has been the raising of standards of personnel. Local public health service has become a merit service. Professional and other personnel are employed on the basis of training and experience qualifications and retain their jobs and advance on the basis of ability and performance. Along with this has come the expansion of training facilities. Graduate schools of public health have been a development of this century with their greatest expansion in the past 25 years. Three such schools now exist in this area, providing training for professional personnel and assisting also in the training of health personnel from other countries of the world.

The public health physician as a specialist in medicine has been a development of the period. The county health officer is now a full-time employee, with experience in planning and operation of health programs and frequently with formal graduate training in public health. He is an administrator of services rather than a clinician. A recent survey of local health officers in the United States[2] showed that on the average only 10.2 per cent of their time was spent in clinic participation. However, 75 per cent of their time was spent in the performance of duties involving medical judgment. The latest development has been the incorporation of the American Board of Preventive Medicine under the sponsorship of the Council on Medical Education and Hospitals of the American Medical Association. Of the total of 704 physicians in the United States holding certificates from this board in 1950, 304 (43 per cent) were in the area of membership of the Southern Medical Association.[3]

Other classes of personnel have been affected similarly by improvement in standards. An example is the development of the sanitarian class from the inspector to a sub-professionally trained individual. Very recently universities have developed courses of training to equip individuals to perform the duties of sanitarians in local health departments.

Along with the expansion of local health services has come the addition of other types of personnel to meet the expanding needs of the service. The rise of new problems and new services has necessitated the introduction of new technics and skills. The health educator with special training in methods and media of dissemination of information is becoming a common addition to the staff. Medical social workers, nutritionists, dentists, psychiatric personnel, to mention a few, are included

in the list of full-time workers in some local health departments.

Health departments have grown in number and type of service and personnel have improved in quality, but the supply of qualified personnel has not kept up with the demand. Minimum standards for basic personnel of local health departments have been set and generally accepted,* but these standards have not yet been met. While 85 per cent of the population of the southern United States lived in areas having full-time local health service in 1950,[4] very few of the units had sufficient personnel to meet the standards. In 1950 there were 641 physicians, 3,925 public health nurses, 2,539 sanitation personnel, and 2,802 clerks employed in full-time local health services in the area. In order to meet the standards, an additional 404 physicians, 4,604 public health nurses, 715 sanitation personnel, and 617 clerks were needed. The suggested districting of local health service by combination of counties into units of at least 50,000 population, if adopted, will reduce the number of public health physicians needed but will not affect the other classes of basic personnel. One cannot predict when standards will be met, since meeting them is dependent both on availability of qualified personnel and on funds for employing them. Standards of quality should not be lowered to meet an immediate need since such an expedient would hurt service in the long run. Planning is necessary to budget properly the high quality services available so that greatest needs are met.

A development of note has been the gradual change in program and services of local health departments. In the early part of the century emphasis was practically entirely on communicable disease control including sanitation. But there has been a gradual shift as programs have been added to meet new problems and as funds have become available. Dr. Winslow has recently said,

"The health officer who is interested merely in backyards and quarantine signs dates back to 1900. The health officer who adds to this immunization, child welfare and tuberculosis clinics dates back to 1930."[5]

Programs designed to conserve health and to prevent illness and death from non-communicable diseases have been added. The present day health officer has a vastly different job facing him from that of his counterpart of fifty years ago. There is temptation to concentrate on the more immediate and new problems to the possible neglect of the time-honored ones: so much so that we find authors counseling us not to neglect communicable disease control since control measures have not yet reached maximum effectiveness.[6]

There has been not only the addition of new programs to meet new problems but a gradual change in emphasis within established programs. An example is the school health program in which the role of the school physician has gradually changed. This role has passed through the communicable disease control era, the medical inspection era and the physical examination era until the final emergence of the school physician as a medical advisor and medical educational consultant.[7]

There are still problems in communicable disease control and sanitation in the South, but the great challenge now is the preservation of health and productivity of the adult. Our population is growing older and the principal causes of death and disability are the chronic diseases of degenerative nature. While this is a community problem as well as an individual one, it is more the latter than the former insofar as solution is concerned. We are looking about for ways and means of meeting it, but have found no measure that can be applied on a community-wide basis that will effectively meet the needs as have the programs in communicable disease control. Multiphasic screening is an attempt but is not the final answer. In this problem as well as in the equally vexing one of mental health, the health department will probably find itself assuming and developing the role of coordinator and integrator. It will serve in an educational capacity and as a real community organizer in development of facilities to complement and supplement those existing.

Over the years, past and future, we can see developing a system in health preservation that will call upon all of the resources of a community. The further development of means and facilities for the care of the sick will be but one phase. More important to us

*One public health physician for every 50,000 persons; one public health nurse for every 5,000 persons; one sanitary engineer or sanitarian for every 15,000 persons; one clerk for every 15,000 persons.

is the expansion of the idea of prevention from the field of those diseases amenable to mass control into the field of individual health conservation. The public health physician will be in the midst of this development working with his professional colleagues in the development of programs, a real opportunity for complete community organization.

Thus developments of the past have had their effect on the present and are affecting the problems and programs of the future. While very few problems have been completely solved, as old ones progress toward solution we turn to face the new. Our experiences with the old may not equip us specifically to handle the new. New methods must be developed, new technics learned. But those achievements of the past serve us well in our outlook for the future. Problems will be ever with us. We need have no fear that we will work ourselves out of a job.

REFERENCES

1. Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, Fifth Annual Report, Washington, D. C., 1915.
2. Ferguson, M.; Graning, H. M.; and Cheney, B. A.: Activities of Health Officers in Local Health Departments. Public Health Reports, 67:673-680 (July) 1952.
3. Health Manpower Source Book, I. Physicians, Public Health Service Publication No. 263, Washington, D. C., May, 1952.
4. Report of Local Public Health Resources 1950, Public Health Service Publication No. 232, Washington, D. C., May, 1952.
5. Winslow, C. E. A.: The Evolution of Public Health and Its Objectives. In Simmons, J. S.: Public Health in the World Today, p. 32. Cambridge, Mass: Harvard University Press, 1949.
6. Sheps, C. G.: The Changing Emphasis in Communicable Disease Control. N. C. Med. J., 11:318-322 (July), 1950.
7. Sellery, C. M.: Role of the School Physician in Today's Schools. Amer. J. Public Health, 42:813-817 (July) 1952.

THE MEDICAL PROFESSION AND THE PUBLIC*

By Louis H. Bauer, M.D.†
New York, New York

The physician can no longer concern himself merely with what is called curative medicine. He must be familiar not only with that, but also with preventive medicine, social medicine and medical economics. By social medicine I do not mean socialized medicine, but the relationship of the patient to his entire environment. The British refer to it as human ecology and it involves housing, clothing, nutrition, and social environment.

Preventive medicine has come to the forefront a great deal in recent years. Until the present century about the only disease which could be wholly prevented was smallpox. Now there are many diseases for the existence of which there is no excuse. These include typhoid, paratyphoid, malaria, yellow fever, cholera, plague, tetanus, typhus, diphtheria and many others. Some of these may be prevented by direct inoculation, but many by environmental sanitation and control of food, milk, water supplies and eradication of disease bearing insects.

Medicine is no longer just a matter for the physician and the patient. Preventive medicine in many instances must be carried out on a community basis and this involves governments, for the control of communicable disease often involves a police power.

Governments have come to play an increasing role in medicine. To a certain degree this is necessary and beneficial. Governments, however, the world over do not seem to recognize that their role is limited. They try to invade the practice of medicine to a degree that is not only unnecessary but detrimental.

We all recognize that our public health facilities must be expanded to cover every area of the country. Much communicable disease could be eradicated if such were the case. Environmental sanitation is woefully lacking in some areas of our country. Housing conditions and nutrition are poor in some areas. The government, however, instead of attacking these basic factors often tries to solve the situation by demanding more doctors and more medical care. To solve it in this way is like trying to fill a barrel with both ends open. Remedying the environmental situation and attacking the low economic level of certain groups would render the need for medical care far less necessary.

Physicians will never be attracted to areas now lacking them, no matter if we have three times the number we now have, unless facilities are made available for the practice of good, modern medicine. No physician worthy of the name will settle in an area where he has to practice "pill-peddling" medicine.

The state of Kansas has solved the problem of obtaining physicians for rural areas, by

*Read in Opening Assembly, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

†President, American Medical Association, and Secretary-General, World Medical Association.

having the communities set up facilities for a physician so that he can practice modern medicine. In two years, under this method, 67 physicians have settled in the rural areas of Kansas in communities of 2500 or less population. What Kansas has done, other states can do.

Programs for the invalid suffering from chronic or degenerative diseases are necessary. The number of these individuals is constantly increasing. The reason for this is that medical science has succeeded in lengthening the life span by twenty years in the last fifty years. Hence, millions of people who would have died in infancy or childhood are now living to middle and old age where they are subject to the diseases accompanying that age.

Medical care for the indigent is very satisfactory in many areas and it should be in all. In my state, New York, the state authorities have entered into an agreement with the State Medical Society, whereby the indigent patient has complete freedom of choice of his doctor, the state pays the bill which is at a reduced rate, the reduction being the medical profession's contribution to charity.

Our voluntary insurance programs are expanding tremendously. A few months ago, 86,000,000 Americans were carrying voluntary hospital insurance; nearly 60,000,000 were carrying insurance against surgery and maternity and over 26,000,000 were carrying medical care insurance in whole or in part. Millions are being added to the rolls each year. We are urging the expansion of voluntary insurance, not only in members enrolled, but to cover those over age 65, and those suffering from financially catastrophic illness. These gaps in coverage must be eliminated to make voluntary insurance a complete success.

All these programs, public health, extension of diagnostic facilities, care for the chronic invalid and the indigent and expansion of voluntary insurance, are being supported by the American Medical Association.

Probably no organization in history has been so maligned as has the American Medical Association. The propaganda against the Association has arisen in part from uninformed and socialistic minded individuals and in large part from the socialistic minded bureaucrats in Washington who resent the fact that the Association has fought their program to foist the socialization of medicine on the American public.

The Association has fought that and it will continue to fight it as long as is necessary. The government has no business in the field of medical care or in coming between physician and patient. Wherever it has been tried it has been a miserable failure. Nowhere in the world has government-sponsored or controlled medical care improved the level of medical care and in most cases it has caused it to deteriorate. In not a single instance is such a plan operating in the black. They are all in the red. The government then tries to cut the deficit by decreasing benefits, restricting treatment, increasing taxes and reducing payments. Nowhere is there an attempt to raise the individual to a level where he can become self-supporting. It is a case of paternalism with encouragement of the individual to turn over his responsibility for himself and his family to the government. He sells his freedom for government subsidies.

Politicians, health ministers and would-be health ministers are not interested in improving the health of the people. They see in the socialized medicine hoax, a chance for what sounds like high minded propaganda with a lure of getting votes to expand their bureaucracies and perpetuate themselves in office. They would do well to think over the remarks of the Right Honorable Sir Earle Page, the Health Minister of Australia. He said in substance, that it is impossible to make any health plan work without the collaboration of those who will have to carry it out, namely, the medical profession.

Governments, on the other hand, seem to have the habit (except in Canada) of ignoring the medical profession. The World Medical Association discovered that in answering a questionnaire which was distributed by the International Labor Organization on the status of medical care, not a single government consulted the national medical association of the country before answering the questionnaire. The International Labor organization also refused to distribute a document on the Medical Aspects of Social Security prepared by the World Medical Association, giving the opinions of the doctors of the world to the delegates attending its recent convention. It distributed instead, a report by a committee

appointed by the World Health Organization on which there was not a single practicing physician. The report was a gross libel on the world medical profession. For example, the report stated that the fee for service system encouraged doctors to keep patients ill and discouraged consultations. Nothing could be further from the truth.

As I have already stated, the American Medical Association has been traduced and slandered by many. How many persons realize that were it not for the American Medical Association, medical care in this country would be at a low level? Instead of that, it is at the highest level anywhere in the world.

Our Council on Medical Education and Hospitals has raised the standard of medical education in this country to an unexcelled plane. All our medical schools are approved schools. This same Council has done much to raise the standards in our hospitals.

Our Councils on Pharmacy and Chemistry, Foods and Nutrition, Physical Medicine and Rehabilitation, Industrial Health and Rural Health have set standards for drugs, other therapeutic agents, special purpose foods, cosmetics, apparatus used in diagnosis and therapy, special methods of treatment, health in industry and have expanded rural health facilities, all for the benefit of the public and the information and protection of the profession in rendering good medical care. The Bureau of Investigation has shown up quacks, charlatans and fraudulent remedies. It is no exaggeration to say that the American Medical Association has done more to raise the health level in the United States than all other organizations put together. It is high time that the people realized what they owe to the Association.

All this is aside from the other scientific activities of the Association for the direct benefit to the profession and indirect benefit to the public, such as our medical publications, scientific exhibits, scientific meetings, socio-economic research, and so on. One cannot mention any phase of medicine in which the Association has not played an active part. One cannot point to a single enacted piece of major Federal health legislation which the Association has not either sponsored or supported. Let some of our critics look over those facts, dispute them if they can, and if they cannot, then stop slandering the Association.

Aside from all this the Association has been the leader of all organizations in fighting the socialism which has been creeping over the country, destroying our freedoms, ignoring our Constitution and laying our American institutions and traditions in mothballs.

I have just returned from a trip around the world. Prior to this I had made ten trips to Europe in five years. I have seen with my own eyes conditions in many countries. The medical profession in many countries is struggling to keep its head above water and is beset by increasing government controls and restrictions. I have seen clinics and out-patient departments where each doctor has to care for 50-60 persons in from 1 to 2 hours. I have seen doctors unable to prescribe what they thought best for the patient because it was forbidden by the authorities. I have seen doctors employed by government or insurance bodies who received so little income that the cost of that type of practice was more than they got out of it. I have seen hospitals built to accommodate 750 persons with over 1,200 patients. This latter, to be fair, cannot be laid at the door of governments, but to the fact that facilities cannot for financial reasons be built adequate to house the patients. Despite all these handicaps I was proud of the medical profession which everywhere is striving to do a good job. It all impressed me, however, over and over, with your and my good fortune that we live in the United States.

I think it is no secret that for years I have fought against the inroads by government into the field of medical care in this country. What I have seen in those countries where medical care is largely controlled by government has convinced me I was right and has strengthened my resolve to continue that fight so long as it is necessary and I am able to do so.

Before I close, I want to tell you something about the World Medical Association. This is an organization of national medical associations and includes in its membership the associations of 44 countries. I find that there is confusion in many minds between the World Medical Association and the World Health Organization. World Health Organization is a branch of the United Nations and represents governments in the field of medicine. Its financial support comes from governments. The World Medical Association, on the other hand, represents the doctors of

the world through their national associations. Its support comes from dues and voluntary contributions, and it is the only organization which can speak for the practicing profession on an international level. I have long known that doctors speak a common language. I have found that they have the same problems the world over, differing only in degree. I have also found that they think very much alike about those problems in general, again differing only as to details. I believe doctors can do more to generate good international feeling than all our diplomats. Good will is sadly needed in the world today. I bespeak a greater role for doctors not only in medical planning, where if the planning is to be workable their participation is essential, but a greater role in international affairs. Doctors are accustomed to assessing the facts, making a diagnosis and then recommending treatment. Certainly world affairs could not be in a more chaotic state than they are at present. The injection of a medical point of view could hardly make them worse, and it might well place the patient, which in this case is the world, well on the road to recovery.

Doctors are human and there are renegades among them as there are in all professions and walks of life. The American Medical Association is trying to have the profession clean house and get rid of those few doctors who charge exorbitant fees, accept kickbacks and engage in other unethical procedures. We are ashamed to have such members in our profession, which they disgrace. Much progress has been made during the past three years in curbing such practices.

On the whole, however, the medical profession considers its objective as one of service to the public. It has two aims: one, to prevent disease; and the other, to cure it if it develops. We are always endeavoring to find ways and means of preventing disease, and if it develops to try to shorten the illness and prevent complications. So far as I know the medical profession is the only group in the world that is constantly striving to ruin its own business.

The World Medical Association is devoted to the same high ideals. It fosters better liaison among the doctors of the world; it endeavors to disseminate information and act as a forum for discussion of mutual problems; it acts as a spokesman for the practicing medical profession of the world (and it has no other) before other international bodies; it is interested in raising the level of medical education, medical care and health throughout the world; and it desires to better international relations.

These are worthy objectives. The medical profession of the world looks to the United States for assistance and encouragement. Let us give it to them for by so doing we shall not only be generating good will, but protecting our own institutions and helping them to help themselves. That is what doctors in other lands want. They do not want charity. If they are down they want help to get up and look after themselves. If they are up they want to stay there and improve their status and that of their patients. They will, indeed, prove to be emissaries of good will, and aid in bringing this old world to a more sane and stable condition. Is there a more worthy cause?

A FABLE*

By FOUNT RICHARDSON, M.D.
Fayetteville, Arkansas

Once upon a time there was a gentleman who lived upon a pedestal. His close friends called him "Doc." He called himself a physician. He dressed in the conservative mode of the day. He carried with him the dignity of decision. He studied his fellow man with as much scientific knowledge as he could muster and conducted his care of his suffering patients with all the study, and all the art he could command. He not only studied his patient; he studied the patient's family, his parents, and so on. Part of his treatment came from his pill bag; part of it came from his heart. He gave full measure of both. He was not too busy on a cold night to go to see a patient. He was not so engaged at the country club that he had to take Thursdays off. Though not often eloquent, he found time to attend the town meetings, to express his sound judgment on a civic or a social problem. He did not leave his charity cases to a social worker or a politician who was out of a job. Often with his fellow physicians he would

*Chairman's Address, Section on General Practice, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

*In connection with this address, the author gives as reference material the writings of a Greek slave of many years ago, Aesop, and George Ade's "Fables in Slang."

plan for an equitable distribution of the charity work to be done in his community. Often one would relieve another so that time could be had for further study. These devotions he took as his duty to that stern mistress, the practice and study of medicine. He never heard of a committee on public relations. His public relations were automatic.

He found many privileges accorded him for this devotion. He was given the first place in any home he visited. He could come and go when he felt it best. His car, or carriage, was noted, and accorded the right of way. His opinions were respected in any department, and his word in medicine was law. He was loved and praised by his clientele. His charges varied from nothing, to a proper fee, for the wealthy. He found room to live on that pedestal, and the persons he served helped to keep him there. This is the man of whom it was truly said, "He is the flower of our civilization."

Then he became a Big Doctor. He called himself a surgeon, or an otolaryngologist, or a roentgenologist, or a general practitioner. His friends dropped the Doc, for the Doctor. It became necessary for him to dress in the plus ultra fashion of some far away town, dominated by actresses, and actors, and others. He turned from the dignity of decision, to the debonair nonchalance of a cosmopolitan. He left the study of his patient entirely to the laboratory. He omitted the art of treating the family. Most of the treatment came in the cool halls of a modern hospital, from an ampoule, or an instrument, from an efficient and highly impersonal nurse. None of his treatment came from the heart. He could not be disturbed at night, but the night's problems could find answers at the hospital where interns were waiting in inexperience, for that service, and experience. He could not be disturbed on Thursday afternoons, or Saturday afternoons, or all day Sunday. Some other doctor, and so forth, and so forth, and so forth.

He took no time for community problems. He left that to the politicians, and the social workers. He decided that the city, or the state, or the federal government could care for the charity cases. He even urged the government to take care of the veterans, and their families!

His late model expensive car forced its way along the thoroughfares, protected from the law by the caduceus.

But he kept all the privileges. That is, until the public found that they had trouble in getting medical care on Thursdays, and those other days, and that being shunted from the laboratory, to two or three consultants for a few minutes each, was time consuming, and very expensive; that there was not treatment from the heart of a friend. He found the public taking over the treatment of paupers, and others; and calling the rules to fit the government, instead of the science and art of medicine. He found himself forced upon a salary, subservient to the politician to whom he left the problem of the sick. He found some solace in demanding, and getting, high fees.

But, he began to lose his privileges. He no longer lived on a pedestal. His acquaintances were large, his friends few. He found himself without any elevation that he had previously enjoyed. He was looked upon as greedy and rich. He lost the sight of his obligations and he lost his privileges.

MORAL

Never sell your birthright for a mess of social pottage.

SUGGESTIONS IN COORDINATING THE STUDY OF THE PSYCHE AND THE SOMA*

By R. Eustace Semmes, M.D.
Memphis, Tennessee

It is customary to speak of the mind and the body and to divide disease into that which is psychiatric and that which is organic, although, of course, the brain and other organs are inextricably associated in one organism; and while the brain is known to control or modify the rest of the body and in turn to be affected profoundly by the other organs, the mind, emotions, and personality itself are dependent upon the organic integrity of the brain. Few patients are, on the one

*Chairman's Address, Section on Neurology and Psychiatry, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

hand, free from organic abnormalities or, on the other, from psychic or emotional involvement to some degree. It is obvious that psychiatrists should be doctors and those in general practice or the other specialties should have considerable knowledge and understanding of the workings and disorders of the mind. Obvious also is the necessity of teamwork in successful study and management of either group. Usually in medical school, the student either becomes interested in psychiatry or organic disease and he starts on his separate way, in many cases, even without a rotating internship for the psychiatric trainee or any appreciable psychiatric training on the part of the others.

The young psychiatrist from there on usually speaks a different language, writes for and reads different journals, studies and treats his patients in different institutions and associates with other members of the profession comparatively little. He goes to meetings of psychiatric societies where only psychiatric subjects are discussed.

After investigating the requirements of the National Psychiatric Board, whose aims at least are high, I quote Dr. Joseph B. Parker of our Department of Psychiatry.

"At present, it would be possible for an individual to qualify and be certified for his board examinations as a psychiatric specialist after having received his training in one of the better (and there are some very good ones) eastern state hospitals without ever having had any significant experience with either the behavior disorders of childhood or with psychosomatic conditions or the ambulatory psychotic and psychoneurotic patients who are seen only in general hospitals and out-patient clinics. Thus, I personally would urge that at least fifty per cent of the psychiatric training be received in a general medical and surgical training unit which exists in the average general teaching hospital affiliated with the various medical schools. Here, if there were sufficient energetic and sincere attempts at integration, back and forth consultive efforts of the various divisions, the psychiatric trainees would have ample opportunity to recognize, understand and treat psychosomatic conditions, and come to recognize diagnostically as well as to appreciate the clinical problems of the neurologists, neurosurgeons and others."

Now how about the member of any of the other branches of the profession? He skims through the all too brief required course in psychiatry, concerns himself little with the mental and emotional status of his patients, does not read psychiatric journals, attend psychiatric meetings or associate with psychiatrists other than in brief and semi-occasional professional contacts. What can be done to change this isolation and artificial separation, bring about coordination, and lead to better understanding, education, and the modification of each other's thinking? The following suggestions are offered:

Training.—To begin at the medical student level, those who do not intend to go into psychiatry should have their interests stimulated by practical courses and clinical observation with particular stress on functional disorders and early stages of the various common psychoses, so that they will continue to be aware of these factors in their patients. No one can be indifferent to or, in fact, fail to be fascinated by the human brain if he knows anything about it. To ignore it in the study of disease can mean only invincible ignorance.

The medical curriculum is already heavy on the side of the organic diseases; but the student who is going into psychiatry should also be required to serve a rotating internship in an approved general hospital and to have a year in internal medicine. Such requirements are time consuming, but the Board of Neurological Surgery has experienced no difficulty in requiring a rotating internship and at least one year in general surgery, demanded by the assumption that a neurosurgeon must be a surgeon.

The general hospital should have also a psychiatric unit, not, of course, for the violent or chronic and advanced cases, but for the early and borderline disturbances which are the most common and which can be most benefited by treatment. The house staff should be required to rotate through this service as well as through the other specialties.

Journals.—The medical journals devoted to psychiatry should publish more papers on general medical subjects and the other journals more papers on psychiatric subjects, all written in language readily understood by its readers.

Societies.—Membership in societies devoted to specialties is desirable and necessary; however, membership and attendance of general societies such as this one, where there is a great deal of intermingling outside as well as in the meetings, are also necessary to prevent over-specialization, or limiting one's knowledge rather than one's practice.

Group Medical Practice.—Grouping together men from the various specialties, either formally or informally, is helpful in integrating the study and treatment of patients who apply for help with somatic, psychosomatic, or psychic disease, or that of mixed etiology; however, many groups do not include a psychiatrist. The medical school, of course, provides a well-balanced medical staff, at least for charity patients.

Journal Clubs.—The medical journal club presents a pleasant and effective device for broadening both viewpoints and knowledge of the various specialties and should always include a psychiatrist in its membership. Our own group is fortunate enough to have Dr. Theron S. Hill, who sees psychiatry in its true relationship not only to organic pathology and physiology but to biology and chemistry as well.

Much is to be learned about the human mind and the human body, but there is also an urgent need to have the knowledge already acquired properly applied by closer coordination with those working in the different fields. I believe that those interested principally in the psyche and those interested principally in the soma have traveled different routes too long and that they should get closer together so that they can pool their knowledge and work together shoulder to shoulder, so to speak, on their problems, which are inseparable.

EMOTIONAL ASPECTS OF MEDICAL REHABILITATION*

By A. Ray Dawson, M.D.†
Richmond, Virginia

I believe that it is a custom for a Chairman's Address either to wax eloquent on the glorious past or to predict the bright future. However, at this stage of growth of our section and specialty, we are young enough to be our own past and our future is too vast for a paper of this length. Therefore, I wish to cast light, dim though it may be, on an approach which will consume more and more of our time as we go forward. Although our past has been of relatively short duration, we have seen much development in the field of restoration of physical function. Now we have reached a point where we must understand the emotions, both stimulating and retarding, if we are to guide our patients to full society adjustments. It would be nice to have a psychiatric consultation on each of our patients but as we cannot, I wish to put the thoughts of this paper in as practical everyday language as possible.

Our subject, "Emotional Aspects of Medical Rehabilitation," naturally falls under two headings: (1) emotional aspects of the physician, and (2) emotional aspects of his patients. I shall discuss the physician's own emotions first. We do need to be reminded that we have personalities of our own and that our own personality is of major importance in our adjustment to our fellow man. There is an axiom in public speaking which says in effect that the burden of understanding rests upon the speaker. This is an axiom which every physician should post prominently on his desk, changing it to read, "The burden of understanding rests upon the physician." How often have we heard a patient say, "I didn't know what that doctor was talking about," or "The doctor was way above my head." It is most important that there be a meeting of minds and personalities between ourselves and our patients, for by the very nature of our work, we must guide the recipient of our endeavors through many stormy periods. Now if the burden of understanding rests upon the speaker or the physician, it is imperative that we study ourselves; we must know our strong points and be aware of our weak ones; and believe you me, all of us have both. Therefore, I say in all sincerity, "First know thyself and this knowledge will be of great benefit to you." But to bring this discussion down to practical terms without going into details, suppose we discuss broadly the extrovert and the introvert among us.

We shall start first with the extrovert, one of those overweight, bald-headed chaps who smokes too much, who drinks too much, who

---

*Chairman's Address, Section on Physical Medicine and Rehabilitation, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

*Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

†Chief, Physical Medicine and Rehabilitation Service, McGuire Veterans Administration Hospital, and Associate Professor of Clinical Physical Medicine, Medical College of Virginia, Richmond, Virginia.

plays too hard, and at times is even accused of working too hard. You know the type that I am talking about. You rarely find him in a research laboratory; he wants to come to the point and do something about it now. This type of personality does radiate confidence to his patients, but in so doing he can become a father symbol, the symbol of domination. Some of our patients do not wish to be dominated; they avoid our extroverts; they balk at his suggestions and become mulish at his prodding; they much prefer to be led. An extrovert becomes irritated at listening to the patient's long, drawn out story, and when we do not listen, we can be sure that blocking begins.

Now we shall discuss the introvert. He is that tall, lanky chap who is never in a hurry; he has none of the characteristics of the father symbol; he is the brother type, he is the brother type that we all love and in a manner protect. He can listen for hours and enjoy every minute of it, but an introvert must push himself to keep on a schedule and he must learn that patients frequently take advantage of him; they can use him for an excuse. Happy is the personality which is betwixt and between, but it is to be remembered that we all have various personality peculiarities. It is these personality peculiarities, drives and retardations, which we must first study, evaluate and modify if we are to bring to our patients the maximum benefits from our knowledge and experience.

Now that we have undressed ourselves, suppose we start to undress our patients. Let us take a quick look at his goals and frustrations. In philosophy it is said that "Every man has a goal in life." In fact, one of the elements of life itself is to have a goal. Goals vary as widely as do individuals. One person will have as his goal, complete removal of himself from associations with other people, therefore, becoming a hermit. Another goal may be that of a movie star, to be seen by everyone. Some goals are totally selfish in nature. Some of our patients regress to an infantile level, requiring constant attention on the part of the mother or the mother symbol. Disability to them is a stepping stone to accomplishment.

Some years ago I was told that the inmates of our Soldiers' Homes were there because they had lost their goals in life, so I went to a Soldiers' Home in an effort to find out if this was so. I found that many had lost their original goals but they still had goals. A large number of the goals were completely non-productive but goals they had. One of the members had accepted the responsibility of keeping the brass cannon polished in front of the administration building. He went to the cannon every morning if it was not raining, and if it stopped raining, he would go there later in the day. I have never seen such a highly polished piece of brass. If the brass had not been solid, I am sure that it would have been wiped away many years ago. A group of members had developed a custom of going to a boat shed and having coffee at 5:00 A.M. every day. One morning one of the group came back to the hospital and asked if we had heard anything about Bill, he must be sick, he was not in for coffee that morning. Sure enough Bill was sick. Only sickness would have kept him away from his goal. But I think that the most unusual goal that I ever saw was a group of eight who had been assigned to fire the volley at the burial of their fellow members. I have never seen such a polished squad in my life. Their leather was shined, their uniforms were pressed, their guns were immaculate, their squad leader was a model of military bearing and command. All one had to do was to give a slight inkling to one of the squad that a member was in the hospital and was about to die. It was like giving that group a shot of epinephrine. Lethargy gave way to activity, guns were brought out and repolished, leather was slicked up, and suits were pressed and cleaned. Of course, this squad had plenty of time to get ready for the thirty minute ceremony at the grave. There were about fifty deaths a year in this particular hospital.

Now if we agree with the philosophers that everyone with reasonable mental ability possesses a goal in life, although these goals may be totally selfish and non-productive, the very fact that man possesses a goal is something for us to work on and is good. Therefore, we must try to arrive at a conclusion as to whether we are pushed toward a goal or whether we are drawn toward a goal; for it is on the basis of this pushing or pulling that we shall be able to help our patients. Dr. William A. White used to tell us as residents that one could determine the age of an individual by

which side of this argument he took. Below forty-five, one always feels that he is pushed toward a goal; one is convinced that he is born with certain dynamisms which push him upward and forward but after forty-five he feels that he is pulled toward a goal: that the goal itself becomes magnetized. It is somewhat the idea that the old battery is running down after middle life. When Dr. White made this observation, I was in my twenties and was thoroughly convinced that I was pushed toward a goal. I did not know exactly where I was going but I knew that I was on my way: in other words, full of vim, vigor and vitality. Now I am between that forty-five and fifty age period, and I am not sure that I am pushed. I have a definite goal but that goal is now pulling me.

My experience leads me to believe that what I have been saying about goals in life and the changing of these goals can be accepted as valid. Therefore, when I am working with an older patient, I remember that his motivation for physical restoration is much weaker than that of the younger man. Our older patients never do as well with prosthetic appliances. They are much more willing to use a wheel chair as a major ambulation procedure. It is difficult to teach the older man to use an artificial arm. He does not like to wear it, and he is not impressed by appearances. From a vocational standpoint, it should be remembered that the older man does not wish to take on new risk business. What he wishes is steady work with security, even at a reduced income. His goal in life usually is not to make money. His goal in life is reasonable responsibility, comfortable routine, and sufficient money to get along on.

At this point, I wish to tell you a story and to emphasize the fact that in addition to the patient's emotions, the physician must beware of his own emotions in dealing with patients.

Some three years ago, I was visiting one of the Veterans Administration Hospitals and a case under question was a middle-aged patient who had lost the use of his left arm as a result of an automobile accident. The physician, a young fellow full of pepper and vinegar, had worked very diligently with the patient and in addition, had set up a vocational objective for him to open a gift shop. The old man was not doing well; he had become balky; he had lost interest in his physical medicine program; he was reluctantly carrying out orders. The vocational counselor and the physician enthusiastically told me of a hobby shop possibility in a particular community which they were working out for our patient to take over when he went home. He knew the community well; in fact, he had lived close by. The patient had been an excellent mechanic and in fact, was a hobbyist himself. The vocational counselor and the physician were very enthusiastic about the matter and said it looked like a natural. There were, however, a couple of things wrong upon close scrutiny of this case. Our patient had never done any selling in his life; he did not want to sell and he did not want to open a risk business. He had made some money so he did not need money; his children were married and getting along well; he owned his own home and had a small income from some property. What he wanted was enough supplemental income so that he would get along all right. I asked the vocational counselor if he himself had ever thought of opening a gift shop and he said, oh yes, he had often thought about it; in fact, he and his wife had discussed it very seriously and furthermore they had decided to open the gift shop in the very town that they were going to recommend to our patient. Therefore, I say, beware of projecting your goal upon your patient and remember that our patients in middle age have not the same needs as those in younger age groups. After a re-evaluation and talk with our patient, he took on new enthusiasm for his treatment and finally got a job as a part time checker for a trucking concern and the last I heard from him, he was very happy in his work.

In addition to the inherited characteristics and age, family patterns determine our goals in life. Here I should like to illustrate by two cases. I think that in Joe Brown's book, "Stars in My Crown" or "The Fighting Parson," the description of Chloroform is one of the most beautiful personality studies I have ever seen. You remember that Chloroform's mother and father, and in fact for some generations back, were of that group that lived on house boats on the Mississippi River. Chloroform got his name at birth because it was the first time that his mother had ever been given an anesthetic for delivery. The name came from this miraculous experience. Then our author goes on to describe Chloroform's adjustment to the community, bringing us to a climax with Chloroform's experience in the country store when a number of the town folks wanted to tempt him with worldly goods. Chloroform had come to the store to buy one fish hook (a number 4, in fact). They took him around the store asking him if he did not want a pair of pants and he said no, he already had a pair of pants. They tried to sell him a watch and he said no, he could look at the sun and tell the time and if it were raining or cloudy, he usually did not go out much, therefore, he did not believe he needed a watch. Then they gave Chloroform a Sears & Roebuck catalog

which he studied while his friends were doing everything that they could to interest him in the many products portrayed in this wonderful book. Finally Chloroform, very embarrassingly, said he believed that all he wanted was one number 4 fish hook, that he was sure the cats would be running after the rain subsided, and that if they would sell him that he would go on back home. The story ends by the storekeeper's saying that there was only one other man that he knew of in all of history who once upon a time was taken up on a high mound and was tempted by the world.

Now in dealing with a Chloroform personality, one does not try to push him. If one does, he will run into an elephant or the patient will simply walk away from the doctor. Time is of the essence in treating Chloroform. Chloroform has learned that time works for him; he never works for time. This type of patient requires patience and understanding.

There is another case, a man who was born in the coal fields, of proud but very poor parents. He was quite a runt; in fact, so small that he could not enter into the games that the other boys played. He was small among people who were large. There, however, was one thing that he could excel in. He made top grades in his high school. He worked his way through college; he coached his way through a Ph.D. degree; he became the world's authority in his chosen subjects. He was always running away from his early environment. Somewhere in this picture we are reminded of the poem "Excelsior." He was to receive the highest award obtainable in his line of work and was actually at a dinner party given in his honor, at the most famous home in this land. During the ceremony, he cracked and for the remainder of his life was in a hospital.

These two cases are extremes. I give them to you because the emotional factors in their lives are pronounced and evident. Chloroform could not adjust to a big city. Should he have an artificial upper extremity, he does not want an esthetic hand. What he wants is a working hook. Our second case was in no need of vocational planning because it made no difference what his disability was, he was going forward. He is a patient who works Saturdays and Sundays; he is a patient who you must always hold back because he is forever gritting at the bit. Perhaps he needed psychiatric help, or perhaps he did not need psychiatric help. Should we have taken away from him his goal or his drive, society would have lost the great wealth of knowledge that he contributed.

The above cases also bring out clearly the factors of recognition. It has been said that men and dogs pack for recognition and love; that most animals pack for mutual benefit; that by nature, man is a lonely animal. You will remember that early in the development of the convalescent hospitals, we emphasized competitive games as a therapeutic procedure. When this did not work, we wondered what had happened. Now we know. First we got a Chloroform who did not desire recognition, and then we got the second type of patient who lived by recognition and if he could not excel, would withdraw. Because of the emotional factors in our patients, we have discarded using competitive games as a prominent part of a medical rehabilitation procedure. I often wonder how much harm we unconsciously do our patients by setting up for them unobtainable goals in relation to physical and vocational restoration. I do not say that we should not motivate our patients but I think that we should know our patients and know them well, and then create goals that are reasonably attainable.

As our personalities develop, three basic factors develop side by side. They are the physical, the mental and the emotional. Educators talk about these factors at great length. A child fifteen is ready for a certain grade in school, is ready for the high school athletic teams and is supposed to be emotionally matured sufficiently to carry on the social functions of the teen-age set. We can take other age groups and say the same thing, but a polio infection will retard normal physical growth. Some of the severe infections or inheritance will retard mental growth; and emotional traumas or emotional illnesses will retard emotional growth. I particularly like the expression "emotional drag anchors" as an explanation of emotional traumas. All of you who fish in deep water know what a drag anchor is. It is one of those canvas contraptions that looks like a big umbrella that you put overboard when you do not wish to be anchored to the bottom, and therefore, no movement. It is instead used to retard the drift of the boat. It does not hold you in one place but it does not let you go freely.

As our patients grow up, they suffer emotional traumas. This trauma becomes a drag anchor. It does not hold the patient still but it will not turn him loose. I have a friend who was frightened as a child by a large wave while he was swimming at Virginia Beach. Today, you cannot get him to go anywhere near water. Personally, I happened to be in a hotel fire two years ago. I continue to suffer from fire phobia. It is the hardest thing for me to be comfortable in a hotel. I always select a motor court which has at least one wide window that I can step out of in case anything happens. A friend of mine will never stop at a motor court because he is afraid that a burglar will step into the window while he is asleep. I know perfectly well what are the causes of my fears and I know perfectly well that I have this drag anchor, fear of fire, and my knowledge of it helps me to adjust to it but does not remove it. These are very evident drag anchors, but all of us suffer from drag anchors, some of which are not evident.

I know a boy who will not work around automobiles because a friend of his lost a leg when a jack slipped. I know a cabinet maker who will not have a circular saw in his shop. He will use a band saw, but some years ago his friend lost a hand in a circular saw and now the sound of the circular saw is so irritating, makes him so anxious, creates such fear in him that it is incompatible with his working. Drag anchors result from uncomfortable emotional experiences. There are emotional traumas of pleasant experience. I remember another chap who lost his father early in life and he and his mother became inseparable. His mother died; he moved to the city, got a job and lived in a boarding house. He made quite a success in his company; in fact, the company offered him real advancement but all of these advancements required his transferring away from where he was living. He would become enthusiastic, make many plans, talk about the new challenges and new opportunities but he was never quite able to move away and in fact, the last time his company offered him a transfer he developed an acute arthritis and as soon as he made the decision not to move away, he proceeded to get well. Perhaps you have already guessed the answer in this case. He married the lady who ran the boarding house, she being in her fifties and he in his middle thirties. As far as I know, they have lived happily ever since. Perhaps it was love but remember emotional drag anchors are very strong things. They can make us incapable of digesting frustrations and they can cause us deep fear; they can retard our medical and vocational rehabilitation.

In summary, I recommend that we first know ourselves, that we study our patients' emotional aspects, realizing that the patient has a goal in life and that we must use these dynamisms or magnetisms as the case may be, in our planning for his rehabilitation. Frustrations and fears usually result from emotional drag anchors. Search out these drag anchors; they will help you help your patient. Make the psychiatrist a part of your armamentarium. There are only two types of cases in which we are doomed to failure before we start. They are the patients who have suffered such mental deterioration as to be incapable of grasping a learning situation, and the patients who suffer from a progressive disease which will cause them to deteriorate faster than we can restore function.

REHABILITATION OF THE AMPUTEE PATIENT*

By DONALD A. COVALT, M.D.†
New York, New York

From earliest time, man has sought a satisfactory substitute when it has become necessary for him to lose an extremity. An early Greek author, Aristophanes, hundreds of years before Christ, mentioned an actor, and a very capable one, who performed with an artificial leg.[1]

Throughout the ages, wars have always intensified the search for a better prosthetic device. This has not been due to the greater numbers of amputations but because of the great interest in the veteran soldier. As a matter of fact, World War II highlighted the fact that there were actually more amputations among the civilian population than

*Read in Section on Physical Medicine and Rehabilitation, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

†Associate Professor of Physical Medicine and Rehabilitation, New York University-College of Medicine, and Clinical Director, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, New York, New York.

there were among the Army, Navy and Air Corps. There were something over eighteen thousand amputations in the three services during the four years of war but there were over one hundred and twenty thousand amputations in the civilian population of the United States in those same four years.

Because of the increased interest during wartime, several millions of dollars were spent on research to develop lighter and more mechanically perfect prosthetic devices for the upper and lower extremities. A Prosthetic Research Committee was set up composed of the finest medical and technical intelligence that was available. As research projects were developed, they were distributed to teams composed of doctors, engineers, limb manufacturers, prosthetic technicians and patients in order that an actual trial of all prosthetic devices could be made under adequate supervision. Some excellent results were produced by these teams.

The Prosthetic Service of the Institute of Physical Medicine and Rehabilitation was established over five years ago as a consultant service. There is no surgery performed by this service nor do they manufacture lower extremity prostheses. However, in the last few years, they have been making upper extremity prosthetic devices. The service is interested in the after-care of the stump, the prescription of the prosthesis the patient may need and the careful training in the use of the prosthetic device after it has been fitted.

Dr. Henry Kessler, in his book, "Principles and Practices of Rehabilitation,"[2] has pointed out that there are five points which must be thoroughly explored for every amputee patient if the patient is to have the advantage of a complete rehabilitation program. These include the following: (1) psychological preparation; (2) selection of site of amputation; (3) after-care of stump; (4) selection of prosthetic device and (5) training in the use of prosthetic device. These will be taken up in order named as carried out by the Prosthetic Service of the Institute.

(1) *Psychological Preparation.*—It is always a tremendous mental, as well as a physical blow, when a patient is told that he must lose a portion of his body. Rarely must amputations be performed as an emergency measure, and, time permitting, the doctor should spend adequate time in the preparation of his patient for the amputation. It has been found helpful to have another amputee visit the patient. Care should be taken to select an amputee who has the same site of amputation as is to be performed on the patient. For instance, you do not send a below-the-knee amputee to visit a prospective above-the-knee amputee, but rather send an above-the-knee amputee who is able to walk and work to visit with the prospective above-the-knee amputee patient.

Movies are available through the Veterans Administration and other governmental agencies which describe the amputee patient at work and play. These can be brought to the hospital room and shown to the patient, if necessary.

(2) *Selection of Site.*—The surgeon, at the time of operation, must, of course, make the final decision as to the site of amputation. Many factors such as the condition of the blood vessels, the blood supply and the amount of healthy tissue available will enter into his decision as to the site and length of stump. I should like to present in this paper the sites of election, if available, which have been found to produce better results for our patients from a rehabilitation standpoint. Included in these better results are less trauma to the stump which means less bruising, less breakdown of skin, and ability to wear the prosthesis over a longer period of time; secondly, the rapidity with which a patient may learn to make the best use of his prosthesis and, thirdly, the most satisfactory prosthesis. Such a prosthetic device may be lighter, may need less servicing and, perhaps, be less expensive. I reiterate, the final choice of site, must, of course, remain with the surgeon.

Starting with the lower extremity, for the above-the-knee amputation, the mid-thigh amputation allowing approximately ten inches of bone below the trochanter is preferred. The longer stump such as the Gritti-Stokes amputation has many advocates in this country and has long been used in Canada and England, but experience has proven that this stump is not so satisfactory as the mid-thigh amputation. The two factors which enter into this decision are firstly, there is more danger of a breakdown with an end-bearing stump, and, secondly, it takes longer to put on the prosthesis. For the

below-the-knee amputation, the site of election is the junction of the middle and upper one-third of the tibia either with the head of the fibula remaining or removed. If the fibula remains, it should be shorter than the tibia and tapered.

The Prosthetic Service at the Institute has found that the Symes amputation which is done through the malleoli above the ankle joint does not make a satisfactory stump for the fitting of a prosthesis. Several have been fitted at the Institute, but usually the skin over the stump breaks down under use. Again, it must be realized that this amputation is utilized by many surgeons in this country, but the Prosthetic Service at the Institute has found through experience that it is not so satisfactory as the junction of the middle and upper one-third of the tibia.

The operations of Lisfranc, Chopart and Pirogoff (amputations through the tarsals) are not satisfactory in so far as being able to fit the patient with a satisfactory prosthesis.[3]

For the upper extremity amputation, the above-the-elbow stump should be as long as possible, eight to ten inches of bone below the tip of the acromion being very satisfactory. The longer the stump, the more leverage is available for the use of the prosthesis. For the below-the-elbow amputation, eight or nine inches below the olecranon will preserve supination and pronation. The Prosthetic Service at the Institute has fitted amputees with a wrist disarticulation with satisfactory protheses but they are difficult to fit, and, of course, the arm is always longer than the normal arm. As much of the hand should always be saved as possible.

(3) *After-Care of the Stump.*—Traction may be used with mole skin adhesive utilizing a divider bar, pulley and weight until healing has taken place.

In the lower extremity, above-the-knee amputation, if elevation is necessary, it is suggested that the patient be placed prone rather than on his back and the stump elevated by means of a pillow. Patients have come to the Institute with flexion contractures from long continued elevation of the above-the-knee stump while the patient was on his back. The flexor muscles are so much stronger than the extensors, and flexion contractures can take place very quickly in this position.

Two six-inch ace bandages sewed end-to-end are very satisfactory for the above-the-knee stump for shrinkage. This should be tighter at the lower portion of the stump and less tight at the top in order to prepare a conical stump. Ace bandages should be crossed posteriorly to the hip joint to prevent flexion contractures. For the below-the-knee stump, leather shrinkers are used very satisfactorily. These should be three to four inches longer than the stump in order to protect the tender end.

(4) *Selection of Prosthetic Device.*—Two rather simple tests are utilized by the Prosthetic Service at the Institute in order to decide whether the patient is able to utilize a prosthetic device for walking: (1) Is the patient able to swing through on crutches? and (2) can he climb stairs with crutches and the remaining leg? In the consideration as to whether a prothesis will be prescribed for this patient, the patient's age, his general condition, and, in the case of the lower extremity amputee, the condition of the remaining extremity from a vascular and musculoskeletal standpoint must be carefully studied. Also, both the vocational and avocational interests of the patient must be considered. For instance, the lawyer who does little walking in his vocation certainly can get along with a much lighter leg than the farmer who must have a sturdy prosthesis.

Legs are made of willow-wood, metal and plastic. The Prosthetic Service at the Institute utilizes both the willow-wood and the metal, generally using the willow-wood leg. The upper extremity prostheses are made, at the Institute, of a plastic called "selectron."

(5) *Training.*—Last but certainly not least, is training in the use of the prosthesis. The training of the upper extremity amputee is done by the occupational therapy department and the patient is not dismissed until he can carry out the ordinary functions of daily living in a satisfactory manner. Also, the occupational therapy department will set up a job situation comparable to the job to which the patient expects to return in order to test the patient's ability to resume his former employment.

Training in the use of the lower extremity prosthesis is done by the physical therapy department and, again, the patient must be able to walk, climb stairs, and walk on uneven ground in a satisfactory manner before he can be dismissed.

It has been found that the majority of these patients have been able to make a satisfactory adjustment, take care of their useful activities of daily living and return to some kind of useful work if the above principles of amputee rehabilitation are followed.

BIBLIOGRAPHY

1. Thomas, A.; and Haddan, C.: Amputation Prosthesis, 1st Edition, p. 1. Philadelphia: J. B. Lippincott Company (Nov.) 1945.
2. Kessler, Henry H.: Principles and Practices of Rehabilitation, 1st Edition, p. 231. Philadelphia: Lea and Febiger, 1950.
3. Thomas, A.; and Haddan, C.: Amputation Prosthesis, 1st Edition, p. 17. Philadelphia: J. B. Lippincott Company (Nov.) 1945.

HUMAN RELATIONS IN INDUSTRY*

By R. Lomax Wells, M.D., F.A.C.P.†
Washington, District of Columbia

Throughout the ages much has been written and spoken with respect to human rights and dignity, with respect to individual and collective freedoms, with respect to man's inter-personal relations, and to the effect of these relationships on the course of human behavior and history. "Perfection walks slowly hand in hand with time," as Voltaire wrote many years ago. And so perfection in the understanding of human behavior has walked slowly, but progress is apparent in many quarters. This has been brought home to me in the words of several distinguished men these past six or seven months as I thought from time to time about what I might say to you this morning about human relations in industry.

Since the President of the United States is the head of the biggest business on earth, I thought it significant when I read the following comments in one of David Lawrence's[1] syndicated columns after the past summer's political conventions:

"The particular talent which makes a President effective in developing public policies is not related to how many years he has been intimately identified with government as such or how much he knows of the technical side of the government. It is primarily related to the kind of personality the man has and how well be can get along with people.

"Perhaps the best illustration is that of Abraham Lincoln. He came to the White House after only one term in the Congress of the United States and without previous knowledge or experience with the Washington scene. His personality, his patience, his understanding of human relationships meant more than mere administrative 'experience.'"

Governor Adlai Stevenson in his welcoming address to the Democratic National Convention on July 21, 1952 spoke as follows:

"What America needs and the world wants is not bombast, abuse and double talk, but a sober message of firm faith and confidence. St. Francis of Assisi said: 'Where there is patience and humility, there is neither anger nor worry.'"

Winston Churchill in his broadcast on the death of King George VI and the ascension of Queen Elizabeth II paid this tribute to the late King's life of good human relations:

"The King was greatly loved by all his peoples. He was respected as a man and as a prince far beyond the many realms over which he reigned. The simple dignity of his life, his manly virtues, his sense of duty, alike as ruler and servant of the vast spheres and communities for which he bore responsibility, his gay charm and happy nature, his example as husband and father in his own family circle, his courage in war or peace, all these were aspects of his character which won a glint of admiration, now here, now there, from innumerable eyes whose gaze fell upon the throne."

TIME magazine[2] (April 14, 1952) reported on "Humanizing Industry—A New Revolution." It reviewed the mechanization of industry as an industrial revolution in which machines replaced the tools of independent craftsmen and in which the dignity of the individual worker suffered. It discussed the beginnings of a second industrial revolution, called human relations, the purpose of which is to give the American worker a sense of usefulness and importance while making life more full and making work more meaningful.

I did not come here today to speak of presidents and kings nor to quote at length from the columns of newspapers and magazines, but I do feel that we should give

*Chairman's Address, Section on Industrial Medicine and Surgery, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

†Medical Director, The Chesapeake and Potomac Telephone Companies, Washington, D. C.

thought to that which is on the tongue of many men and examine it in the light of our own lives and our own responsibilities as they relate to our particular industries and the people who work in them. Our primary responsibility is to assess the effect of interpersonal relations on the health of the people working in those environments for which we are responsible. Having assessed this effect, we should institute corrective and educational measures, if needed, and broaden our horizons to find measures that will prevent strife and disagreement, unhappiness and anxiety, worry and fear, and the little petty annoyances of life. That is a large order and it may even strike a note of idealism. If so, what is wrong with that? For who among us can be honest and still say we should not "Hitch our wagon to a star" and, may I add, having reached a goal, hook it onto another star and shoot straight ahead towards another and newer goal. For therein lies a measure of the art of medicine. Science may be a factor but I give you the art as the major factor in ferreting out and finding the answers to why people are not happy, why they do not get along together and how these things affect their jobs and their health. Therein lies a challenge. We must, as physicians, accept the fact that human relations do affect human health. Cameron[3] aptly defines human relations as,

"Common every day experiences in our professional and personal lives," and adds: "Human relations have to do with the nature of inter-personal contacts between individuals and groups of individuals, how people get along with each other."

You have only to look at the sickness absenteeism report in any industry to see clearly the major problem of absenteeism due to emotional disorders. On the basis of studies in this country and in England it is estimated that about 30 per cent of the total sickness absenteeism is attributed to emotional disorders. Many studies indicate that interpersonal relations are often a major factor in these upheavals. The adverse effect of these disturbances on individual health and efficiency are widely accepted. Poor human relations within and without the working environment probably causes many of these absences due to emotional problems. The National Industrial Conference Board's 1952 report[4] on "Controls for Absenteeism" says:

"The first requirement to absenteeism control is the presence of a sound human relations program."

It further emphasizes that "the supervisor's influence is paramount" and that,

"The worker who is happily placed and well adjusted will not often be willfully absent. He may, however, be stricken with sickness and that is where preventive medicine and health maintenance may be helpful."

Good human relations within the working environment mean a good job with a satisfaction in the doing of it. Experience has taught all of us that there is no precise and standard formula for dealing with people. Each situation and each individual in that situation presents its own peculiar aspects. To meet varying situations the skilled leader must adapt principles to meet these differences.

Our concern as physicians in this field of human relations is to improve the ways in which we deal with our fellow worker and the way in which he deals with us and others. In this task we must have the full cooperation, skill and know-how of all the groups that make up a modern industrial plant. A co-ordinated effort towards the understanding of how people behave as they do will accomplish much in improving interpersonal relations on and off the job. It must be remembered that one's individual problems, concerns and anxieties with respect to home and community are not checked at the door of the job to be picked up on the way out at the closing whistle, nor are the problems of one's job stuck in a desk drawer at the end of each and every day. Problems know no hour and heed not the urgency of requirements of home and job responsibility.

We must understand attitudes and behavior. We must understand that there is always a reason for the way people behave. Certain basic human needs are apparent in all workers: job satisfaction, security, pay. This latter need (pay) has been shown in several studies to rate below job satisfaction and security. What is job satisfaction? I would say that job satisfaction comes from being treated in a considerate manner, in being kept informed of what is going on and why, in knowing what a particular job is and how it is to be done. Certainly we all need and demand a minimum amount of personal recognition.

Sir John Ludrock[5] expresses it this way:

"Managers of men should remember that they are directing men and not machines. The occasional friendly word or judicious praise often gives a spur to more effective work. It is vital for those in positions of responsibility to be patient despite trying conditions. Above all they must be fair. No matter how restricted it may be they should try to appreciate the other person's point of view. . . . To hear patiently what their subordinates have to say and to convince these subordinates that they want to be fair and just should be among the first lessons learned by all in positions of authority."

Pertinent to this thought is the following doggerel by Strickland Gillilan:

"I'm such an arrant splutterfus
In bawling out the other cuss,
That everyone's surprised to see
How tolerant I am with me."

Human relations is an art requiring the daily, constant, thoughtful application of what is honest and decent and right in our associations with our fellow men. The translation of knowledge of what to do into an effective course of action as to how to do it requires training and self-discipline; understanding, patience and sympathy; forcefulness, forthrightness and a true sense of fairness; the will and the desire to do it. We may know what to do but should we lack skill in knowing how to do it, little can be accomplished. Basic human needs can be supplied and justified only by those who have the "know-how" and not just the "know-what." You and I may know what are the ills of our patient. This does not relieve his suffering, this simple knowledge of what is wrong. We must know how to treat his illness effectively. This is equally applicable to emotional and physical disorders.

A human relations program in industry is not a program designed to "win friends and influence people." It is a study in the art of living and working together in harmony to the end that each of us may be fully productive and happy. It is a study in the art of human understanding and the day by day application of this art in our relations with those with whom we come in contact.

It is my observation and deep belief that we as industrial physicians have many day by day opportunities to apply our skills and art in cementing good human relations among all levels of our organization. These opportunities begin with our understanding of the applicant for employment, his feelings as he approaches a new job in new surroundings. We can begin to make him feel at home by a skillful examination made in pleasant surroundings and in a pleasant manner. When the applicant becomes an employee we can further cement the bond of good human relations if he recognizes in us one to whom he can come in confidence with his problems and receive an honest, sympathetic, fair appraisal and good sound treatment and advice. We can help to heal the misunderstandings that occur between the employee and his supervisor by listening to his story and giving to him practical, impartial counsel that leads to an improvement in the relations between him and the boss. Likewise, we can counsel with his boss. As a member of the management team we can help to instill in the ranks of labor a feeling of good will towards the owners and managers of a business by demonstrating the spirit of fair play in the handling of accident problems and the problems related to sickness absence and disability pensions. You and I are physicians. As industrial physicians we are part of the management of the business. We have an obligation to the management of the business and to the rank and file employees. This dual obligation need not confuse nor confound us if we practice good medicine and good human relations.

If industry is to do a good placement job it must give systematic thought to human basic needs and to the application of these needs to the working environment. It must appreciate that attitudes are often more important than skills. You and I must also give thought to these things, for we are daily concerned with the applicant for employment as well as the worker on the job. Our attitude toward our job must be healthy if we are to be effective. We must be students of human nature and we must be tolerant and understanding. The supervisor, the employee, the physician and the nurse, these I give you as the cornerstones on which good human relations in industry can be built.

REFERENCES

1. Syndicated column: The Evening Star, Washington, D. C.
2. TIME Magazine: Humanizing Industry—A New Revolution (April 14) 1952.
3. Cameron, Dale C.: Human Relations in Occupational Health. Public Health Reports 67:686-689 (July) 1952.
4. National Industrial Conference Board, Inc.: Controls for Absenteeism. Studies in Personnel Policy, No. 126 (August) 1952.
5. Sir John Lubrock: Tact, ed. 19, pp. 3-4. New York: Charles Francis Press, 1952.

OCULAR LESIONS IN CHILDREN SIMULATING RETINOBLASTOMA*

A REPORT OF FOURTEEN CASES OF PSEUDOGLIOMA

By J. JACK STOKES, M.D.
Atlanta, Georgia

During the past 10 years, 14 cases of so-called pseudoglioma have been received at the L. F. Montgomery Laboratory of Eye Pathology, Emory University. All of these cases came from ophthalmologists in the Southeastern United States and demonstrate the various types of conditions in children which prove difficult in the clinical differentiation from retinoblastoma. The clinical diagnosis in each case was retinoblastoma. This report is essentially a survey of the pathological findings in these globes but important related clinical findings are also given.

In the January, February, and March, 1952, issues of the *American Journal of Ophthalmology,* Sanders presented a clinicopathologic study of 15 cases of pseudoglioma. He gave as one definition "any intraocular lesion which is impossible to differentiate absolutely from retinoblastoma." One of the results of this study was a classification[1] of these cases of pseudoglioma as follows:

Type I Persistence and hyperplasia of the tunica vasculosa lentis
Type II Organization of a vitreous mass forming a cyclitic membrane
Type III Chorioretinitis
Type IV Exudative retinitis
Type V Massive retinal fibrosis
Type VI Retrolental fibroplasia
Type VII Other tumors, such as diktyoma and angiomatosis retinae

This has proved to be a useful and workable classification. In the present series, there were one case of type I, five cases of type II, two cases of type III, four cases of type IV, one case each of types V and VI, and none of type VII.

Type I, or persistence and hyperplasia of the tunica vasculosa lentis,[2,3] (persistent hyperplastic vitreous), is a unilateral and congenital condition, occurring usually in full-term infants. There is a well vascularized and dense retrolental connective tissue mass, typically thickest centrally and fading off peripherally. The ciliary processes are pulled centrally by incarceration in the vitreous mass. The retina may also extend into the mass, but is usually not detached posteriorly. The other pathological findings are: a hyaloid vessel, which may be seen clinically if the lens is clear and the retrolental mass small; a dehiscence of the posterior capsule of the lens leading to cataract formation; proliferation of the subcapsular epithelium posteriorly. The one case of persistence and hyperplasia of the tunica vasculosa lentis in this series showed all the above findings. Peripheral and pupillary anterior synechiae were also present due probably to the swelling of the lens or to contraction of the retrolental mass which pushed forward the iris-lens diaphragm. A dense corneal opacity developed. This eye was from an 18-month-old infant who was first noted to have a white pupillary mass at the age of three weeks. When first seen by an ophthalmologist at the age of 16 months, the eye was noted to be smaller than its mate and a white retrolental mass was present. The eye was enucleated because of the apparent hopelessness of the condition. It was impossible to rule out retinoblastoma although there was absence of intraocular calcification.

Type II, which is the organization of a vitreous mass to form a cyclitic membrane, is a very important group. The membrane may be either post-inflammatory, due to the organization of a vitreous abscess, or post-hemorrhagic, due to the organization of a vitreous hemorrhage. The lesions are almost always unilateral. It may be frequently impossible to establish with certainty the origin of any particular vitreous mass. Granulation tissue certainly bleeds readily and at the same time hemorrhage excites a mild or moderate inflammatory reaction, as does a detached retina. It is thought that all of the cases in this group were post-inflammatory. Vitreous abscess commonly results from a non-traumatic, metastatic infection of the retina or choroid which ruptures into the vitreous cavity. One of the cases of type II was a nematode endophthalmitis, which was not present in Sanders' series. The pathological diagnosis of this condition is suspected if eosinophilic abscesses are present in the

*Read in Section on Ophthalmology and Otolaryngology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

*From the Department of Ophthalmology, Emory University School of Medicine, and the Grady Clay Memorial Eye Clinic, Grady Memorial Hospital, Atlanta, Georgia.

vitreous membrane or in the retina and when they are surrounded by a granulomatous reaction. The diagnosis is confirmed if a larva is found in such an abscess as was seen in several sections of this case. Frequently only the cuticular products of the worms are present.[4] Leukocoria is due to the presence of the cyclitic membrane or detached retina. The essential findings of the five cases in this group were the presence of a vitreous mass of connective tissue to which the detached retina was adherent; chronic inflammatory cells in the mass; and other evidence of inflammation such as posterior synechiae.

Type III, which is chorioretinitis (endogenous uveitis), represents a more localized inflammatory lesion otherwise similar to that of type II. Sanders[1] considered toxoplasmosis and tuberculosis as the more common causes of the pseudoglioma in this group. In none of our cases was a definitive etiological diagnosis made. The lesions appeared to be similar to those of chronic uveitis as seen in adults. The retrolental mass usually proved to be detached retina. In type II and type III, history of previous febrile illness and pain and redness of the eye, past or present, are the outstanding clues as to the proper clinical diagnosis. Frequently, however, all of these symptoms and signs are lacking and only the presence of a white pupillary mass causes the parents to bring the patient in for examination. One of the 2 cases of this type of pseudoglioma showed histologically a complete retinal detachment, a large chorioretinal adhesion posteriorly, and choroiditis. The other also showed a complete retinal detachment and focal areas of choroiditis.

Type IV, which is exudative retinitis[5] (external exudative retinitis of Coats), has the following characteristics: the disease is usually unilateral and seen in otherwise healthy young people. Pathologically, there is a diffuse edema of all the retina with a localized area of retinal inflammation and degeneration usually involving chiefly the inner layers with edema and infiltration of albuminous fluid.[5] The retinal vessels are greatly dilated. Hemorrhage may also be seen within the retina and beneath it. Encapsulation of a subretinal mass of albuminous fluid, cholesterin crystals and granulation tissue is common. The uvea is normal. The so-called ghost cells of Coats,' which are seen in great numbers in and beneath the retina, are generally considered to be derived from the pigment epithelium of the retina. It may be that these macrophages are wandering histiocytes and are blood borne. The four cases of exudative retinitis showed all the above findings in varying degrees. In one of them, there was present a large subretinal mass, as described above. Approximately one-third of all the pseudogliomas are cases of exudative retinitis. Clinically they resemble retinoblastoma perhaps more closely than any of the other pseudogliomas, and differentiation will rest largely on the absence of intraocular calcification. Only one of these four cases had an x-ray of the globe, and it was negative for calcium. Two complained of pain or were reported to have had redness of the involved eye. The ages were 18 months to three years.

Type V, which is massive retinal fibrosis, a condition first described by Reese,[6] is characterized by a localized area of fibrosis within and beneath the retina. Pigment derived from the pigment epithelium layer of the retina and from blood is present in the lesion. Signs of inflammation are almost completely lacking. The underlying choroid is normal. It is supposed that the lesion arises through organization of hemorrhage resulting from trauma. There was no history of trauma in the one case of massive retinal fibrosis in this series. Pathologically, there was a subretinal mass of connective tissue and proliferated metaplastic pigment epithelium near the disc on one side. The retina showed fibrosis and was pulled over the disc. There was also a lesion near the ora serrata on one side which was joined to the main subretinal mass by a vitreous band.

Because of the tremendous interest in the disease and the routine examination of premature infants in most hospital nurseries during the first four to five months of life, retrolental fibroplasia, type IV, will probably disappear as a class of pseudoglioma. The clinical course of the disease is well known.[7] Retrolental fibroplasia is always bilateral, almost always found in premature infants and frequently leads to a complete retinal detachment in each eye. It is only in this late stage that it might be mistaken for a retinoblastoma.

Pathologically, the disease is characterized, in the final stage, by subretinal hemorrhage with detachment of the retina, a fibrous tissue mass behind the lens, proliferation and detachment of the ciliary epithelium, and connective tissue and blood vessels on the surface of, within, and beneath the retina. Rosettes and pseudo-rosettes may be seen in the retina. The anterior chamber is shallow and peripheral anterior synechiae may be present. Posterior synechiae and rubeosis iridis occur occasionally. The chief findings in the one case in this group were: a shallow anterior chamber and peripheral anterior synechiae complete retinal detachment, and sheets of vascular tissue on the anterior surface of the retina.

There were no cases of type VII (diktyoma and angiomatosis retinae) in this group.

All the cases in this study except the one of persistence and hyperplasia of the tunica vasculosa lentis, the one of massive retinal fibrosis, and one of the cases of exudative retinitis, had a complete retinal detachment. In the case of exudative retinitis, the retina was partially detached and the other two were blind eyes with lesions that clinically were sufficiently suspicious to warrant enucleation.

How might the usual pseudogliomas be properly diagnosed clinically? Of course, familiarity with the various lesions is fundamental. Sanders' classification aids in the clinical analysis of the conditions which we must consider in the differential diagnosis of retinoblastomas. Eleven of the fourteen pseudogliomas in our series are cases of either post-inflammatory conditions (combining types II and III) or exudative retinitis. Perusal of the histories which were sent with the cases in this series was not productive of any points of value in differentiating these lesions from retinoblastoma. Strabismus, leukocoria, pain and redness were noted in some cases. A few had glaucoma; others hypotony. Vitreous opacities were seen in some cases and retinal detachment was recorded in several. A review of the histories of the 21 cases of retinoblastoma received by the laboratory during the same period revealed similar symptoms and signs. The only difference worth noting perhaps was the mean difference in age, that of patients with pseudoglioma being 48 months and that of patients with retinoblastoma being 27½ months. Types II and III, and especially the former, are most difficult to diagnose as they present no typical lesion clinically, that is, they are not seen usually until the retina is detached or a cyclitic membrane is present. The other five groups do present lesions which are characteristic, at some stage of the disease. Type I pseudoglioma appears to get worse due to cataract formation or to intraocular hemorrhage. Type IV and type V appear to grow due to contraction of scar tissue or hemorrhage. The presence of calcium ophthalmoscopically and radiographically is a very important confirmatory sign in the diagnosis of retinoblastoma. However, other conditions in children which may cause an intraocular deposition of calcium are toxoplasmosis, nematode endophthalmitis, any pseudoglioma causing cataract and calcification of the lens or phthisis bulbi.

Perhaps there should be a routine to be followed in the work-up of a suspected glioma. The minimum would seem to include a skull x-ray for cerebral calcification to rule out toxoplasmosis, x-ray of the globe for intraocular calcium, x-ray of the chest to rule out granulomatous disease, and a stool examination for the presence of parasites. The blood smear should be examined for eosinophilia which in the absence of allergy might indicate worm infestation. Blood for the dye test for toxoplasmosis should be sent to the laboratory of The National Health Institute at Bethesda, Maryland, or to some other reliable laboratory. The tuberculin skin test and blood Kahn should also be done.

CONCLUSIONS

A pathological analysis is given of fourteen eyes which were removed because of the suspicion of retinoblastoma. Eleven of these fourteen cases were post-inflammatory conditions or cases of exudative retinitis (Coats'). This incidence agrees closely with that of the series reported by Sanders and indicates the conditions most often mistaken for retinoblastoma.

REFERENCES

1. Sanders, T. E.: Pseudoglioma. A Clinicopathologic Study of 15 Cases. Part II Pathologic Classification. Amer. J. Ophth. 35:199-213 (Feb.) 1952.
2. Reese, A. B.: Persistence and Hyperplasia of the Primary Vitreous: Retrolental Fibroplasia—Two Entities. Arch. Ophth. 41:527-549 (May) 1949.

3. Reese, A. B.; and Blodi, Frederick C.: Retrolental Fibroplasia. Amer. J. Ophth. 34:1-24 (Jan.) 1951.
4. Wilder, H. C.: Nematode Endophthalmitis. Tr. Amer. Acad. Ophth. 54:99-109, 1950.
5. Lamb, H. D.: Exudative Retinitis. Amer. J. Ophth. 21:618-641 (June) 1938.
6. Reese, A. B.: Massive Retinal Fibrosis in Children. Am. J. Ophth. 19:576-582 (July) 1936.
7. Owens, W. C.; and Owens, E. U.: Retrolental Fibroplasia in Premature Infants. Amer. J. Ophth, 32:1-21 (Jan.) 1949.

110 Medical Arts Building

SURGICAL TREATMENT OF HEMIFACIAL SPASM*

By G. O. Proud, M.D.
Kansas City, Kansas

To many of us it is a refreshing experience to discover that a certain condition, which has always been accepted as a psychosomatic problem, is in actuality of organic origin. It is more delightful to learn that surgical intervention in such an instance is definitive, and at this time it would appear that the operative treatment of hemifacial spasm poses such an example.

This non-fatal but distressing malady has been treated with little success in the past, although attempts have been made to produce partial paralysis of the facial nerve by alcohol injections at the stylomastoid foramen and others have advised section of the seventh nerve followed by anastomosis to the spinal accessory. Waltman, Williams and Lambert deserve credit for the observation that inflammatory edema of the facial nerve is in some instances responsible for such symptoms and they reported two cases in which decompression of the facial nerve was carried out with complete remission in both.

Before discussing the surgical technic involved it is well to emphasize that a differential diagnosis between tic and true hemifacial spasm must be made. A tic is a habit pattern of psychogenic origin and is a coordinated, repetitive, seemingly, purposive act involving a group of muscles in their normal synergistic relationship. It appears suddenly, recurs at irregular intervals and ceases during sleep. Muscles supplied by more than one nerve may be involved. The movements of hemifacial spasm are definitely not purposive and are less gross than those of a typical tic. Furthermore muscles supplied by only one nerve, are involved and all components seem to be affected. Between attacks there may be weakness of the face or in other instances the face may appear drawn on that side due to shortening of the fibrils from repeated activity. In our series seven cases have been operated upon. All have been patients over fifty years of age, and the appearance of the nerve has been most interesting. In one instance the nerve was over 0.5 cm. in diameter and presented an exceedingly rough granular surface. In the other six cases the nerve was smaller but nevertheless was swollen, red and presented a fusiform swelling midway between the stylomastoid foramen and the horizontal semicircular canal.

Surgical Technic.—It is strongly recommended that those who are not experienced in facial nerve surgery perform the procedure a few times upon the cadaver before the operation is attempted on the living. It should be mentioned that even the most deft surgeon will experience some anxious moments while the facial ridge is being reduced to afford actual visualization of the nerve itself. In every instance the nerve became normal in caliber and appearance just inferior to the horizontal semicircular canal. One should avoid entering the mastoid antrum if possible for only two of the seven cases suffered hearing loss (15 decibles for all frequencies in each instance) and in both patients the antrum was invaded. At each operation the nerve sheath was observed to be tough and leathery and it was necessary to use scissors to complete the neurolysis. The thickness was exaggerated just distal to the stylomastoid foramen.

Results.—None of the seven patients had been afflicted for less than three years. The first case was done eighteen months ago. Six became free of spasms immediately following operation and have remained so. One case was only partially relieved and this was the individual with the huge nerve previously described. In this patient it is highly possible that the nerve was involved with neoplasm, but biopsy was not done for fear of producing paralysis. However a small portion of the sheath was removed and microscopic study revealed chronic inflammation

---

*Read in Section on Ophthalmology and Otolaryngology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

*From the Department of Otorhinolaryngology, University of Kansas School of Medicine, Kansas City, Kansas.

and liberal deposits of calcium. Intercurrent cardiac disease has precluded further investigation of this patient.

DISCUSSION

The etiologic factors involved in the creation of the neural edema remain obscure but the limitation of the swelling to the region distal to the horizontal canal might suggest that the process begins in the face and ascends. The presence of the fusiform swelling is unexplained. Too little time has elapsed since the study was started and too few cases have been operated upon to permit the otologist to predict a successful outcome in every patient.

ATOPIC DERMATITIS*

By PAUL A. O'LEARY, M.D.
Rochester, Minnesota

There are persons who are born to eczema, to whose disorder the terms "atopic" or "allergic" eczema or neurodermatitis or both have been applied loosely and interchangeably. These patients may first manifest their cutaneous disease shortly after birth and this episode may last for one or two years. The dermatitis may reappear when the patient is 5 or 6 years old, again at the age of 10 or 12 years, and perhaps still again as the late teens are approached. Often the last mentioned attack may be the most severe one and it may be the last. Not all of these patients display this periodicity, as those with extreme types may have no periods of freedom from the dermatitis, and by no means do all of them outgrow the dermatitis by the time they mature. Nonetheless, remissions and recurrences are a common feature of this entity, which is also characterized by its classic distribution, with involvement varying from that of a single patch to that of the severe cases in which the entire skin is affected.

The recurrences or flare-ups are not always of the same degree in the sense that the intensity and extent of the dermatitis may be mild and limited during one attack, while in a subsequent attack the involvement may be extensive. In babies, the predominant feature of the skin eruption is its eczematoid nature, while in adults, the lichenification and pigmentation are outstanding. The flare-ups in the latter group may be featured by an edematous erythema with severe pruritus. The fact that these patients may also display a tendency to hay fever or asthma or both and that their parents may have or have had hay fever, asthma or eczema creates a clinical picture that is all too familiar to dermatologists. It is my purpose to discuss some of the things known about these patients, as well as the many things not known about them.

GENERAL CONSIDERATIONS

The word "atopy," coined by Coca,[1] is the one I find most applicable to this group of patients. Neurodermatitis is a generic term which should be limited to dermatitis of psychogenic origin, such as neurotic excoriations, factitial eruptions, pruritus ani, dyshidrotic eczema, and so forth, and such a diagnosis should be qualified by designation of the type of cutaneous lesion. The term "allergic dermatitis" should be used to designate unfavorable reactions in the skin due to the ingestion of food or contact with chemical, plant or other factors, and similarly the term "allergic" should also be qualified by designation of the irritant, if demonstrated. The loose manner in which the term "neurodermatitis" and "allergic dermatitis" are employed has created considerable confusion not only in the minds of dermatologists, but also in the minds of other physicians and the families of the patients. The term "neurodermatitis" implies a concept of etiology, but we know that psychogenic factors are not the sole cause of atopy. Accordingly, atopy or atopic eczema is the most practical term to use when the entity is discussed.

Most, but by no means all, atopics first display their eczema during infancy. This does not imply that every baby who has a dermatitis is an atopic, because some of these children may have seborrheic, contact or drug dermatitis, to mention a few of the possibilities. A period of observation and treatment may be necessary in order to determine that the problem is one of atopy, and invariably dietetic readjustments are made during this period. In certain children the dietetic changes, usually augmented by local applications, seem to reduce the intensity of the dermatitis, while

*Read in Section on Dermatology and Syphilology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

in others, dietetic modifications produce little if any change for the better, the attack pursuing its usual course to a remission. I do not believe that atopic dermatitis in infancy is ever cured by dietetic adjustments, although dietetic changes may be advisable, as in other diseases of children. Neither do I believe that food *per se* produces the syndrome of atopy, although it may aggravate the atopic state. It is during this early period in life that the atopic personality begins to appear, to become more obvious as the child enters the next phase of the disease, with the second cutaneous flare-up usually at the age of 5 to 8 years.

Atopic children are precocious, restive, active and somewhat aggressive. At first they do well in their school work; they are capable and the parents tend to overload them with extracurricular activities. Piano lessons, art work, French, and so forth, are added, because the children seem able to adapt readily to the extra load. By the time the atopic youngster has reached the age of 5 to 7, he has become the dominating influence in the household, as the parents and siblings have become subservient to the dermatitis and the child's discomfort. The "spoiled child" becomes more obvious. This is not said critically but to point out that the state of affairs is the result of the family's effort to make comfortable a child that is sick and unhappy not only because of the pruritus but also because of the inhibitions created by the dermatitis. As the child enters the third phase of atopy, which occurs as he approaches puberty, some of the personality characteristics change. He is less precocious, his school grades are lower, and he loses the qualities of leadership he displayed when younger. His appearance leads to frustration, and the classroom failures lead to further disinterest, aggravated by the fact that his social activities are limited.

It is not unusual to note that the dermatitis which was mild with only slight pruritus previous to final school examinations will flare considerably and rapidly when the tests begin. It is at this period that some of these children outwardly display their complexes for the first time. The mother-daughter, father-son, or sister-sister rejections may become obvious and audible. It is helpful in some cases to interrupt these unpleasant relationships by separating those involved, but the relatives should be warned that the atopic person may develop a similar reaction to someone else, even while under the influence of a new environment. Entering a boarding school or joining the Army has helped to ameliorate such incompatibilities. It is during this third phase of atopy that these children may be helped by teaching them to live within the limitations of their skin, to use their skin as a speedometer or altimeter, that is, as an indicator that an exacerbation of the eczema will occur frequently when they are fatigued and tired. Fatigue is another trigger that produces recurrences but is not an etiologic factor in the cause of atopic eczema.

To live within the limitations of their skin implies many things to atopics. To some it presents an opportunity to give up their schooling and to stay at home, and to others it is the alibi for their inability to keep a job. They flit from one position to another, not only because of exacerbations of the dermatitis, but also because of their inability to apply themselves adequately or because of their complex of chronic invalidism and the desire for maternal protection which they have enjoyed for many years. Many teen-aged atopics are fortunate enough for one reason or another to outgrow the dermatitis, while the less fortunate, or perhaps I should say in the more severe types, the eczema may persist the rest of their lives. The latter group spend much time in and out of hospitals, moving from East to West, or North to South, but never finding the oasis that will rid them of their skin troubles. In between these two groups are those who retain a small amount of dermatitis, who find relief in the dry warm climates but who are prone to develop occupational or contact dermatitis in a new occupation or avocation.

The adult atopic may go from maturity to menopause with little if any eczema, only to have a flare-up as the age of 50 is approached, and thereafter the recurrences may be persistent, or frequent, and periods of hospitalization are often necessary.

Some atopics develop a pallor, to which we have applied the term "alabaster," which gives them an easily recognized appearance. The pallor is apparently due to a vascular instability of their peripheral vessels.

The development of cataracts is a complication to be anticipated in the atopic. Brun-

sting[2] recorded this observation, calling attention to the fact that cataracts develop in patients who have at no time received roentgen therapy, so that the suggestion has been offered that irritation of the optic lens by circulating allergens may be the causative factor. Many of these patients do not require surgical treatment of the cataracts, as the latter remain mild and interfere only slightly with vision. Also, it is my experience that the cataracts develop during the teen age almost exclusively.

ETIOLOGIC ASPECTS

Thus far I have described the course of atopy, calling attention to the most outstanding characteristics. The etiologic concepts are not numerous nor are they factual; accordingly, we must start with the premise that the true cause of atopy is not known. It is obvious that we know little of the atopic's physiology, that our knowledge of his vascular physiology is lacking, that our knowledge of his biochemistry is meager, and our methods of determining it may be crude, and that the neurophysiology and physical reactions are not understood. I am inclined to the belief that when the allergic concept was accepted, further thought in regard to the cause of the disease was minimized; in other words, because we believed, we stopped thinking. I have gone through thirty years of attempting on various occasions to cure an atopic by dietetic measures and have failed repeatedly in such efforts. Nor have I seen an atopic who was cured by dietetic measures that were instituted by others. However, I have seen many atopics outgrow their disease while on unrestricted diets. Neither have I cured an atopic by having him avoid house dust and the many other air-borne substances to which he gave positive skin reactions. It is apparent that certain foods will increase the pruritus and certain air-borne substances will do likewise, but when these things are avoided, the atopic does not become nonatopic and his skin disease does not vanish.

I am critical of the concept that allergy is the sole cause of atopy, because of my failure to influence the course of the disease materially by applying any knowledge gained by skin testing in any of its technics. It is common sense for the atopic to avoid foodstuffs that he thinks make him itch, just as you and I avoid the foods that cause us discomfort. Similarly, atopics whose skin is irritated by wool or nylon are urged not to wear such clothing. That allergens are present in these patients has been well established, but their presence does not denote that they produce the syndrome, if for no other reasons than that persons in whom the same allergens may be demonstrated may not be atopics. Their presence may well be a part of the whole picture, just as involvement of the cubital spaces and emotional instability and hay fever are part of the entity but not the cause.

Skin testing has been unproductive of leads that cure the atopic. Many of the positive results are false reactions in a skin that is overly reactive to many things it comes in contact with, and especially to substances injected into it. The positive skin reactions merely confirm the clinical impression that the patient is "a reactor." For the second time we have stopped doing skin tests on these patients, because elimination of and avoiding things they reacted to failed to control the dermatitis. We now attempt to determine by prolonged questioning of the patient his reactions to various ingestants and contactants, and he is encouraged to avoid such factors, if present. Most of the atopics I see have undergone intensive and extensive skin testing and dietetic programs without worth-while improvement. An antigen-antibody reaction may be demonstrated in the atopic but efforts to desensitize the patient to these substances does not result in cure. Likewise, it is not possible to establish the presence of reagins in all those who are atopic.

The psychogenic concept likewise does not adequately explain the cause of atopy. The atopic personality is different and is readily recognized as the child grows older and passes through the various phases of the disease. Emotionally he is different from normal folks, and he displays this difference in the degree and extent to which he reacts to external stimuli. The literature contains numerous discussions of the atopic personality and means of minimizing his disease by adjusting him to his problem by sympathetic management and psychotherapy. The mother-rejection complex is difficult for me to accept in a 6-month-old child; however, I have observed numerous instances of mother-daughter, father-son, and sister-sister rejection in the

teen-aged groups. Separation in such instances tends to minimize the amount of eczema if the child moves to an environment to her liking, or if the son is permitted to follow his own wishes rather than pursue the desires of a domineering father. These separations may lead to partial relief while the child outgrows the atopic dermatitis, or if the patient creates another complex, a completely new one, the respite may be temporary. When these family, school, business or environmental incompatibilities can be interrupted by disassociation, the dermatitis may be less troublesome, but unfortunately not all atopics, for numerous reasons, are able to make such separations.

It appears to me that the psychosomatic features of the atopic are a part of and not the cause of the atopy. I have not been impressed with psychoanalysis or profound psychotherapy as therapeutic agents, even by those well experienced in such procedures. I have felt, however, that the family-physician type of guidance will help some of these patients, pointing out to them things to avoid, such as love affairs at the wrong time, intensive work at college, the wrong type of job and so forth. Counselling of this type may be helpful in the young adult group, but such suggestions are not always applicable to those in middle life whose home, business or family problems cannot be changed. This superficial type of psychotherapy may be one form of internal medication, while the soothing lotions and baths are a necessary form of external therapy. Experience has demonstrated that some atopics display sufficient emotional instability to warrant efforts to correct them, but like the antigen-antibody concept, it is not demonstrable in all patients and is not prominent enough to explain the cause of atopy. The atopic is a reactive type of person: reactive to ingestants, contactants, inhalants, and situations. Trauma from either proteins or increased psychogenic disturbances may precipitate such a reaction.

H. L. Williams[3] has recently surveyed the literature on allergy and suggested as a working hypothesis a theory based on the autonomic vascular reactions. He found that the antigen-antibody concept failed to explain satisfactorily allergic states, that specific methods of treatment were not successful whereas nonspecific measures may be helpful, and that the typical histologic picture of allergy may occur without the intervention of an antigen-antibody mechanism. Ashley, in discussing Williams' paper, stressed the role of edema as the primary cause of symptoms in all allergic reactions, and emphasized that dilatation of the capillaries as a result of sympathetic-parasympathetic imbalance leads to extravasation of serum and electrolytes and eventually edema. This concept of vascular instability produced by various agents such as protein substances, emotional stress, and physical factors, alone or in combination, is broad in its scope, inclusive, and one which I find satisfying in our present state of knowledge.

D. H. Williams[4] demonstrated that the intramuscular injection of histamine in the atopic produced an increase in skin temperature at the sites at which the dermatitis is most commonly found. Eyster, Roth and Kierland[5] undertook further studies of the vascular system in the atopic and showed that the patient with atopy displays an abnormal peripheral vascular response. Such a patient shows an increased rate of cooling in a cool environment and a delayed rate of warming in a warm room, which suggests an increased vasoconstriction of the peripheral vessels. The hyperreactive response of the blood pressure during the cold test also indicates increased vascular reactivity.

White dermographism is a common reaction in the atopic. When the skin is stroked with a blunt instrument, a red line appears, which is followed by a blanched line which lasts for five minutes or longer, while in the nonatopic, a red line, a flare and then a wheal will appear, in that order. Lobitz and Campbell[6] have recently studied this phenomenon and found that acetylcholine produces a delayed response in the blanching reaction, which they attribute to the direct action of the vasoconstrictor substances on the blood vessels of the skin.

These efforts in the investigation of the physiologic characteristics of the atopic are preliminary studies, just the beginnings, and there are many facets of this problem still unsolved. However, they indicate that atopics are peculiarly constituted as regards their vasomotor mechanism, as is manifested not only in the skin but also the nose, the lungs and the gastro-intestinal tract.

Although the term "eczematoid diathesis" has long since been forgotten, it is neverthe-

less applicable to the atopic, because it is usual to obtain a history of eczema in one or the other parent or at least the grandparents. The A. E. H. (asthma-eczema-hay fever) complex of Stokes[7] is common to the atopic and the family background, but it is likewise a characteristic of the syndrome rather than the cause. It is commonly noted that only one child in the family is an atopic, and although not all atopics may give a history of family eczema or hay fever and asthma, the tendency to eczema in families must be accepted; however, that again is an observation that does not explain the basic problem.

Seasonal variations in the disease are likewise confusing in that although some atopics have flare-ups during the summer while pollens are air-borne, an equal number may have exacerbations during cold weather. These seasonal variations may demonstrate the atopic's physical instability, as I have felt for some years that the atopic responds unfavorably to extreme changes in temperature; apparently his physiology does not permit him to adjust readily in going from cold outdoors to a warm house or vice versa. Hot tub baths give him temporary relief from the pruritus but are usually followed by an exacerbation.

It has been known for some time that some of the atopics who go to west Texas or Arizona have less eczema and appear to control the disease there more readily than when at home. What happens to such a patient? Why are the majority of them more comfortable there? Apparently several possibilities may explain the improvement. If the patient is irked by the incompatibilities at home, the move to Arizona may help because his complexes are lessened; the young adult atopic who has been cloistered enjoys the freedom and lack of restraint probably for the first time; the distance from his home may be great enough to prevent frequent visits by the parents. The sunshine of the southwestern part of the United States is to me not so prominent a factor as the things that are not done while enjoying the heliotherapy. The lying about, the mañana attitude, the lack of responsibility, the freedom, the "on their own" may aid in leading to the improvement. Sams[8] has called attention to the part that the lack of humidity may play in aiding in the absorption of sweat and sebum, thus making these patients more comfortable while in the dry warm climates. I find it difficult to offer a simple explanation for the improvement these patients show while away from home and living in an equable climate, because not all patients are improved by such climatic change, although those who improve may show a striking and permanent result. Young adults do much better than do the middle-aged group, and those with environmental incompatibilities do best.

The word "fatigue" readily comes to my mind when thinking about the atopic, and it has become a part of my discussions with these patients. The significance of fatigue, emphasized by Becker and Obermayer,[9] has been repeatedly demonstrated in our experience by the results of rest in bed and of soothing applications, and by the need for such rest as a prophylactic measure in preventing or minimizing a flare-up of the dermatitis. Fatigue is perhaps a loose word or even a colloquialism when used in this manner but it is a fact that the atopic tires more easily and needs more rest in bed than the nonatopic. Patients understand a discussion in which it is emphasized that they have 75 to 85 per cent of the endurance of their associates and accordingly must decrease their activities 15 to 25 per cent according to the severity of the atopy. I have demonstrated to my satisfaction that rest in bed at home and rest in bed at a hospital are of equal value, and accordingly such rest is not a means of avoiding contactants or airborne irritants. This factor of fatigue is again not the cause of atopy, but one of its characteristics.

Other factors that may influence an atopic unfavorably are intercurrent infections, especially those due to viruses, although tonsillitis, pyelitis and so forth may cause considerable trouble. It is not uncommon to note an exacerbation of the eczema during such illnesses. The significance of herpes simplex virus in the production of Kaposi's varicelliform eruption is an example of the susceptibility of these patients to such infections. Likewise, drugs of various types are not well tolerated by the atopic; especially is this true of the barbiturates. Our experience in this regard has led to the use of chloral hydrate as the least reaction-producing sedative for these patients. In other words, all of these reactions by the atopic indicate his sensitiveness not only to infection and drugs but also to en-

vironment, to incompatibilities, and even to the exigencies of living.

DIAGNOSIS

The diagnosis of atopic eczema may be difficult if the morphologic features alone are considered, so that historical confirmation is often necessary. In the infant the eczematoid features are predominant, but as the child grows older, lichenification and pigmentation of the face, neck and upper part of the chest, and flexural areas of the arms and legs create a classic picture; however, the clinical features may vary from that of a single patch of chronic lichenified eczema to one in which the entire skin is thickened, pigmented and excoriated.

The infant with a dermatitis of the cheeks may or may not be an atopic, and time and observation may be necessary to rule out seborrheic or contact dermatitis. In childhood and adolescence the diagnosis becomes less difficult as the characteristic morphologic features and the classic distribution are apparent, and a history of infantile eczema is obtained. In the middle-aged group the differential diagnosis between atopic dermatitis, disseminated neurodermatitis and allergic eczema may be more difficult because the characteristic features may be overshadowed by the eczematoid elements. In the severe atopic with marked pigmentation, lichenification and generalized adenopathy, it may be necessary to employ diagnostic procedures to eliminate the possibility of lymphoblastoma.

TREATMENT

The treatment of the atopic is an involved procedure varying from the treatment of infantile eczema to the treatment of dermatitis in the aged in its acute, subacute and chronic phases. The therapeutic approach requires not only the use of topical applications judiciously selected and applied but also attention to the elimination of the numerous factors, irritating rather than etiologic, which I have mentioned.

To this audience it is not necessary to recommend the use of wet dressings and tub baths of oatmeal and soda or starch during the acute edematous phases, or a soothing lotion when subacute, or a 1 per cent tar application during the remissions and lichenified phases. There is no specific or curative topical application for atopics at the present time. Roentgen therapy has never been a feature of my practice, so we use it only rarely on the atopic. The effort to avoid trauma to the skin from scratching is an essential part of treatment and in the infant it may require the use of arm splints or similar measures to restrain the patient. Similarly, the avoidance of wool or nylon or similar irritating garments is advisable.

Rest in bed is an important part of treatment during the flare-ups and has value as a prophylactic measure against recurrences. I have mentioned my lack of enthusiasm for skin testing of these patients, and I have less interest in efforts to desensitize them to substances to which they have shown positive skin reactions. I have seen no benefit whatever from such measures but have observed numerous patients in whom severe exacerbations and generalizations of the dermatitis have followed such attempts. However, suggestions in regard to avoiding contact with known irritants such as ragweed or horse hair or whatever agents may be suspected should be made.

Mention has been made of the inability of dietetic adjustments to influence the course of atopy materially, as severely restricted diets for long periods of time have not prevented flare-ups of the dermatitis. Common sense should guide in the elimination of foodstuff which the patient does not tolerate, whether it be egg, chocolate, wheat, pork or milk. The employment of rigid diets, often inadequate from the dietary standpoint and ineffectual against the atopy, should be avoided. The evidence that dietetic measures control or cure the atopic is entirely presumptive; it is based on *post hoc ergo propter hoc* reasoning, as in my experience prolonged dietetic trials in a large series of patients have been of little value.

The change of environment to either a dry warm climate or a new community is of benefit in certain cases but not all. I have already mentioned some of the reasons improvement follows such a change, believing that the lift all of us get from the rest and vacation away from home has merit. It is not possible to demonstrate psychic complexes in all atopics, but in those who do display such reactions, definite improvement follows when the situation is adjusted. Unfortunately, the atopic personality is prone to develop a similar re-

action to other people or to a new situation, and so it appears that these psychic phenomena are another feature of and not the cause of atopy, and their removal does not result in cures.

The drugs that are of help in combating atopy are few in number. The antihistamines relieve the pruritus somewhat, and in turn decrease the amount of trauma to the skin from scratching. In the severe exacerbations with uncontrollable paroxysms of itching, the use of corticotropin (ACTH) or cortisone will modify the pruritus while rest in bed and topical applications are decreasing the degree of dermatitis. In the less severe flare-ups, the steroids likewise give the patient some relief, which unfortunately is temporary, and an exacerbation or flare-up of the dermatitis usually follows when use of the drugs is stopped. Chloral hydrate in small doses is a satisfactory sedative for the atopic.

It might well be an error to attempt to attribute to a single etiologic factor the varied clinical picture with its numerous facets that we call "atopy." It is known that the skin reacts differently to the same noxae and that different noxae will produce dermatologic pictures that are quite similar or undistinguishable. We recognize that various factors such as I have mentioned will precipitate exacerbations of atopic dermatitis, call them trigger mechanisms if you please, but we must admit to a lack of knowledge of the cause of the basic or fundamental differences between the atopic and nonatopic individual, and until information in regard to the cause or causes of the syndrome are recognized, the treatment will continue to be empiric.

SUMMARY AND CONCLUSION

The course of the atopic from infancy to old age has been discussed briefly with emphasis on the periodicity, the tendency to remissions and exacerbations, the variations from a constant life of eczema to one in which the disease is mild, and the tendency to outgrow it by maturity. The allergic, dietetic, psychosomatic and vascular etiologic concepts, as they are known today, have been reviewed and found wanting. It is not possible to accept either one or a combination of these concepts as the sole cause of atopy, as they are manifested in varying degrees, are not all present in every patient, and seem to be a part of the syndrome rather than the cause of it. As the cause of atopy is not known and as the fundamental differences between the atopic and the nonatopic are not understood, the syndrome offers an unlimited field for investigation of the basic problems.

REFERENCES

1. Coca, A. F.; Walzer, Matthew; and Thommen, A. A.: Asthma and Hay Fever in Theory and Practice. Springfield, Ill.: Charles C. Thomas, Publisher, 1931.
2. Brunsting, L. A.: Atopic Dermatitis (Disseminated Neurodermatitis) of Young Adults: Analysis of Precipitating Factors in One Hundred and One Cases and Report of Ten Cases with Associated Juvenile Cataract. Arch. Dermat. & Syph., 34:935-954 (Dec.) 1936.
3. Williams, H. L.: A Concept of Allergy as Autonomic Dysfunction, Suggested as an Improved Working Hypothesis. Tr. Am. Acad. Ophth., pp. 123-144 (Nov.-Dec.) 1950.
4. Williams, D. H.: Skin Temperature Reaction to Histamine in Atopic Dermatitis (Disseminated Neurodermatitis). J. Invest. Dermat., 1:119-129 (Apr.) 1938.
5. Eyster, W. H., Jr.; Roth, Grace M.; and Kierland, R. R.: Studies on the Peripheral Vascular Physiology of Patients with Atopic Dermatitis. J. Invest. Dermat., 18:37-45 (Jan.) 1952.
6. Lobitz, W. C.; and Campbell, C. J.: Physiologic Studies in Atopic Dermatitis. Arch. Dermat. & Syph. (In press.)
7. Stokes, J. H.: Diathetic Eczema: Cutaneous Phase of Eczema-Asthma-Hay Fever Complex. M. Clin. N. Amer., 15:279-296 (Sept.) 1931.
8. Sams, W. M.: Humidity: Its Relation to Problems in Dermatology. South. Med. J., 44:140-147 (Feb.) 1951.
9. Becker, S. W.; and Obermayer, M. E.: Modern Dermatology and Syphilology. Ed. 2, Philadelphia: J. B. Lippincott Company, 1947.

THE PHYSIOLOGICAL BASIS OF ALLERGY*

By ARTHUR C. GUYTON, M.D.
University, Mississippi

Though there are many clinicians who believe the clinical treatment of allergic conditions is based principally on empirical knowledge rather than on a physiological background, it is, in reality, surprising how much is known about the physiological basis of allergy. Therefore, it seems important at the present time to review the present knowledge regarding the basic mechanisms by which allergic phenomena are manifest. The purpose of this paper is, first, to review the basic immunological reactions which lead to the production of histamine or other degradation products which in turn cause allergic symptoms; second, the reactions of histamine and histamine-like substances in the body will be discussed; third, the process of desensitization by immunization and desensitization by histamine injection will be discussed; and, finally,

*Read in Section on Allergy, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

*From the Department of Physiology and Biophysics, University of Mississippi School of Medicine, University, Mississippi.

the effect of various drugs, such as the antihistamines and cortisone, on allergic states will be presented.

(A) THE BASIC IMMUNOLOGICAL MECHANISMS WHICH CAUSE ALLERGIC REACTIONS

It has been known since the earliest studies of immunity that the processes of immunity and hypersensitiveness are indelibly linked. Indeed, at present it is believed that no true allergic hypersensitive reactions occur except when immune bodies to a specific allergen exist in the individual. The problem at present, therefore, resolves itself around the question: how do the processes of immunity cause hypersensitivity in certain individuals?

(1) *The Antigen-Antibody Reaction as the Cause of Allergic Reactions.*—It will be recalled that an antigen is a substance which when injected into an animal will cause the animal to produce specific antibodies against the antigen. If at a later date the same type of antigen should be injected into the same animal, the specific antibodies which by that time have accumulated within the animal's body will immediately react with the injected antigen to neutralize it. This reaction of the antibodies with the antigen is probably a semichemical, semi-physical combination of the two substances, and the actual process of combining of the two within the body is not without effects on the individual.

When antigens and antibodies react within the blood stream, almost no effects occur, but this is not true when the reaction takes place within the tissues, for such a reaction occurring either on the surface of the various cells of the body or within the cells themselves, for some reason which is not known at present, causes the release of histamine or a histamine-like substance. It is this histamine or histamine-like substance in turn which causes the overt symptoms and signs of the allergic response.

Experimental evidence indicates that it is mainly the reticulo-endothelial cells of the body and the lymphoid tissue which produce the antibodies. However, once the antibodies are produced, they enter the blood stream and diffuse throughout the body. Because antibodies are globulin compounds with molecular weights of approximately 160,000, they diffuse very slowly through the capillary pores into the tissue spaces. Gradually, however, it is believed that the antibodies diffuse among all of the cells of the body and either attach themselves to the surfaces of the cells or actually penetrate into the substance of the cells. Then, whenever a specific antigen arrives in the tissues, a reaction between the antigens and the antibodies in the presence of the tissue cells causes the allergic response.

(2) *Active Versus Passive Sensitization.*—Regardless of where the antigens and antibodies come from, if they react in the presence of tissue cells, the allergic response occurs. For instance, the antibodies may be injected intravenously and actually may be antibodies from a rabbit or a horse or any other animal. Also, the antigen can be injected intravenously, it can be injected intradermally, or it can enter the body by way of the alimentary tract, by way of the pulmonary tract, or otherwise. If the antibody-antigen reaction occurs in the blood stream before the antibodies and antigens have reached a point in the body in communication with appropriate cellular structures, very little or nothing happens; but, if the antigen-antibody reaction is delayed until both of these substances have diffused among tissue cells, then the allergic response is capable of occurring.

It can be seen, therefore, that a person can become sensitized to an antigen either by active production of antibodies within his own body or he can become sensitized to an antigen by passive injection of antibodies, the antibodies having been formed in the body of some other animal. There are a few differences, however, between active hypersensitivity and passive hypersensitivity. With regard to active hypersensitivity, as is also true with active immunization, the process of sensitivity continues over a period of many months to years because of continuous production of antibodies in response to the original presence of antigen. On the other hand, in the case of passive hypersensitivity the antibodies which have been injected into the body of the subject are enzymatically destroyed within a period of a few weeks, and any hypersensitivity which develops by a passive mechanism is usually completely gone at the end of this period of time. It should also be noted that in passive hypersensitivity, it usually requires three to seven days after injection of the antibodies for these to pass out of the blood stream amongst the cells and to fix themselves

to the cells before a maximum state of hypersensitivity is reached.

(3) *The Manner in Which Antigens Enter into Immune Reactions to Cause Hypersensitivity.*—In studies on immunity it has been found in general that essentially no substances besides proteins can cause immune bodies to be formed in an animal. However, almost any protein from any source has this antigenic ability to cause the production of immune bodies. This explains why many of the antigens which cause hypersensitive reactions in individuals are protein in nature.

On the other hand, there are a very large number of allergens, including various inorganic chemicals, various polysaccharide compounds, alkaloids, and so on, which are not protein in nature. For a long time it was difficult to understand how these non-protein substances could cause typical antigen-antibody hypersensitive reactions. However, it has been shown that these various non-protein allergens when combined with a protein of almost any nature can then cause immune bodies to be formed in an animal, these immune bodies being specifically reactive with the allergen itself and not with the protein that is bound with it. Therefore, when a non-protein allergen enters the body by any route, it, theoretically, can form a linkage with protein molecules within the body and thereafter proceed to form specific immune bodies against the non-protein allergenic substance. At some subsequent date when the same allergen enters the body of the animal, the specific antibodies immediately react with the allergen to neutralize it and at the same time to cause the typical hypersensitive reaction.

(4) *The Liberation of Histamine or Histamine-Like Substance from the Tissue Cells in Response to the Immune Reaction.*—It is not known exactly how histamine is liberated from cells when antigen and antibody combine or when non-protein allergens and antibodies combine, but it is known that histamine is always present throughout the body. The tissues of the lung and epidermis have an extremely high content of histamine, whereas the liver has a moderate amount and muscle has only a small amount. Furthermore, it is found that after any generalized allergic reaction, such as anaphylactic shock, the content of histamine in these various structures is greatly reduced. Consequently, it is believed that the antigen-antibody reaction does not actually increase the production of histamine but simply causes a more rapid and sudden release of histamine from the cells.

Though histamine has been specifically implicated as a product of the allergic reaction more than have other substances, this is certainly a mistaken notion, for it is well known that heparin, which decreases the coagulability of the blood, is at least one other substance released into the blood stream as a result of such a reaction. It is probable also that leukotaxine, a substance which attracts leukocytes from the blood stream into the affected areas, is formed in response to the immune reaction, for leukocytic infiltration does occur. However, because the effects of histamine far overshadow the effects of these other substances, it is generally considered that the allergic reaction is caused almost entirely by the histamine released.

(B) REACTIONS OF THE BODY TO HISTAMINE

There are three major effects of histamine on the human body. These are bronchiolar spasm, capillary dilatation with increased capillary permeability, and secretagogue effects on various glands.

Obviously, the bronchiolar constriction effect of histamine can very easily lead to an asthmatic attack. Along with the bronchiolar constriction, histamine causes the secretion of a thick, ropy, mucous material which tends to plug the bronchioles at the same time that they are being constricted. Also, histamine causes edema of the epithelial lining of the bronchi and bronchioles which causes further decrease in the lumen of these tubes.

The capillary dilatation which occurs when histamine enters freely into the circulatory system causes, first, an intense flushing of the skin because of the increased quantity of blood in the capillaries. As the capillaries become more and more dilated the pores are stretched so that they become much more permeable than normally. Consequently, fluid leaks very rapidly through the capillary pores, and not only do water and electrolytes pass through these pores, as is the normal situation, but large quantities of plasma proteins also pass into the tissue spaces. If the quantity of histamine in the circulatory system reaches extreme heights, many capillaries actually burst and bleed into the tissues.

One can understand from the effects of histamine on the circulatory system how many of the symptoms of allergic states are brought about. It is readily understood how an individual becomes flushed as the allergic reaction causes an increased quantity of blood in the capillaries. Secondly, it can be understood how erythematous dermatitis of many types can develop as a result of histamine. It is sometimes hard to understand why punctate areas of redness and swelling sometimes occur rather than a generalized state of redness and swelling, but it has been found that when histamine is injected intravenously, those areas of the body which are specifically stimulated by scratching the skin, pressing on various points, and so on, become affected before the other areas. Also, in many erythemas, the allergen enters the body through punctate areas of the skin and causes only local responses.

The loss of large quantities of fluid and protein from the circulatory system through the pores of the capillaries in response to histamine can cause two additional allergic symptoms: these are urticaria and anaphylactic shock. Urticaria usually begins at specific points over the body which have been scratched within the past few minutes, or have been pressed upon by sitting on a chair, or have been irritated in some other manner. However, as the condition progresses further, even those tissues which have not had a secondary damaging influence will begin to swell. There is not a great difference between the basic reactions which cause urticaria and those which cause anaphylactic shock, for in urticaria small amounts of fluid and protein leave the circulatory system at localized areas of the body, while in anaphylactic shock, large amounts of fluid and protein leave the circulatory system over wide areas of the body. The net result in the end is a diminished blood volume. This combined with the pooling of a relatively large amount of blood in the greatly dilated capillaries decreases the return of blood by way of the great veins to the heart. Consequently, the cardiac output falls to very low levels so that the individual passes into a state of shock.

It has been known for many years that histamine can cause the secretion of a highly acid gastric juice. Indeed, it is believed that histamine or a histamine-like substance is actually liberated under normal conditions by the antral portion of the stomach and is a main stimulatory factor in the control of gastric secretion. In some individuals histamine can cause very marked secretion by other glands. This has already been mentioned in connection with the mucous glands of the lungs, and of particular importance is the stimulation of nasal secretions. It is believed that a large portion of the nasal secretions occurring with the common cold result from the allergic release of histamine into the nasal tissues when these tissues are attacked by the cold virus. In addition to the secretory effect of histamine in the nasal tissues this substance also causes an urticaria-like reaction within the submucous tissues; that is, the capillaries become greatly dilated and porous so that large quantities of fluid and protein collect beneath the mucous membrane.

(c) THE PURPOSE OF THE IMMUNOLOGICAL-HISTAMINE REACTION

Even though histamine is found in all tissues of the body, it has been doubted for many years that it has any real physiological purpose, and it has been believed that about all histamine does is to cause harmful reactions such as are seen in allergic states. However, a very important purpose of histamine in the body is suggested by the above discussion of its circulatory reactions. When a foreign substance to which the body has become immune enters the tissues by any route, this causes the immune reaction to take place followed by liberation of histamine or a histamine-like substance. Immediately the histamine reacts with the local capillaries to cause capillary dilatation and increased porosity. Consequently, large quantities of fluid and proteins enter the tissue spaces in the affected areas. Because the capillary fluid is moving into the tissue spaces instead of being absorbed under these circumstances, essentially none of the foreign substance can be absorbed by way of the capillary into the circulatory system. Instead, this foreign substance must pass by way of the lymphatics and through the lymph nodes before entering the circulatory system. It is probable that the lymph nodes, by means of their reticulo-endothelial system, can remove any toxic substance before it has a chance to do any generalized bodily harm. Secondly, the increased porosity of the capil-

laries in the localized area of the immune reaction allows the release of large amounts of protein into the area of the reaction, these proteins containing a large supply of immune bodies which aid the local tissue antibodies in the neutralization of the foreign substance. Therefore, it is to be believed that the immunological-histamine reaction is a very necessary part of the immunological protection of the body against foreign substances and that excessively hypersensitive states as exhibited by some individuals are an unfortunate accompaniment of this natural reaction.

(D) DESENSITIZATION BY HYPERIMMUNITY

It has been observed many times that the hypersensitive state which leads to allergic symptoms usually occurs when the total quantity of immune bodies in the individual is relatively slight, and, when the total quantity of immune bodies becomes great, the hypersensitive state disappears. In a series of animal experiments it has been shown that the presence of large quantities of immune bodies in the circulating fluids of the body will neutralize any incoming allergen before the allergen can get into the tissues to cause an allergic reaction. Consequently, in the clinical practice of allergy it has become the purpose of the allergist to determine, first, what substances cause hypersensitive responses in a patient and then to desensitize this patient by giving him progressively greater and greater quantities of the specific allergens until his state of immunity becomes so great that any incoming dose of an allergen will be neutralized before it can pass from the body fluids to the actual cells.

The process of desensitization by hyperimmunity becomes very difficult in the case of allergens which are non-protein in nature, because these allergens in general will not build up a very high state of immunity in the individual. As was noted above the non-protein allergens probably must become conjugated with protein molecules within the body before they can build immune bodies at all. As a result of this necessary extra step, the statistical probability of building up large quantities of immune bodies is greatly lessened. Nevertheless, by persistence and prolonged treatment even with these non-protein allergens it is possible in many instances to develop a state of hyperimmunity sufficient for the allergic response not to occur.

(E) HEREDITARY FACTORS IN HYPERSENSITIVITY

It is not known why some individuals exhibit the phenomenon of allergy whereas other individuals do not, for it has been shown many times that when properly exposed to foreign proteins, all human beings can be sensitized. Therefore, the existence of an allergic state in some individuals though not in others is almost certainly a matter of degree rather than a completely different genetic pattern.

It has been shown among lower animals that the guinea pig, for instance, responds by extreme bronchiolar constriction to histamine, whereas, the rabbit responds by extreme pulmonary arteriolar constriction, and dogs respond to histamine mainly by capillary dilatation and circulatory shock. Thus it can be seen that there are many different reactions of histamine in different types of animals. Furthermore, it has been shown that different species of guinea pigs may react quite differently to sensitization. It is to be believed, then, that different human beings who have different genetic make-ups may respond quite differently to histamine, some of these individuals responding by an anaphylactic shock type of reaction, others by an extreme secretory reaction in the nose or elsewhere, and, finally, still others responding by the asthmatic type of reaction.

Another manner in which the genetic make-up of the individual may influence his hypersensitivity is that one individual may be a powerful histamine producer in response to the immune reaction, whereas, the other may be a poor histamine producer. Indeed, it is quite possible that localized areas of cells in an individual may have a genetic make-up which allows these particular cells to liberate large quantities of histamine, though the main proportion of the body of the same individual does not have this genetic make-up. This could explain why allergic reactions frequently occur in localized areas of the body even though it is impossible to exhibit the same type of response over the rest of the body.

Another possible hereditary difference among individuals which might account for the allergic state could be the manner in which the allergen enters the body. For instance, it

has been found that as much as one out of every 3,000 molecules of protein in the food may pass unaltered through the gastro-intestinal epithelium into the blood stream. Also, one out of every eight molecules of protein entering the lungs may pass through the respiratory membrane into the blood stream. Though it has never been shown to be true, it is quite possible that these two routes of absorption of proteins might vary greatly in their percentage of efficiency from one individual to another.

Finally, there is another possible difference between individuals which might account for the allergic state in some. It has been shown that certain species of animals and certain individuals within a species are capable of producing far greater quantities of immune bodies than are other animals. As was noted above in section D, whenever the total quantity of immune bodies is either very low or very high, no hypersensitive response occurs. Therefore, differences in ability to produce immune bodies undoubtedly enter into whether an individual will be allergic or not.

(F) DESENSITIZATION WITH HISTAMINE

In the last few years it has become the vogue to desensitize patients, particularly those patients who have so-called histamine headache, with histamine itself. It has been shown in lower animals that though histamine is not a whole protein, it can react in the body more or less as do non-protein allergens to cause the production of immune bodies. As these immune bodies become produced in larger and larger quantity, it is at least theoretically possible for them to destroy considerable quantities of any histamine which is liberated from the tissues before the histamine can pass to other areas of the body to cause allergic symptoms. In order to enhance the production of antihistamine immune bodies, attempts have been made to conjugate histamine with a protein before injecting it for desensitization purposes. Such a procedure has been shown in experimental animals, usually, to increase greatly the number of immune globulins produced against any specific non-protein chemical. Unfortunately, however, neither the conjugated protein-histamine compound nor histamine alone can cause the production of sufficient quantity of immune bodies to be of great benefit to the patient. Therefore, the claimed success of histamine desensitization is probably based on some other phenomenon such as tachyphylaxis or perhaps even psychic effects in the recipient.

(G) THE FUNCTION OF THE ANTIHISTAMINES IN ALLERGIC STATES

All of the antihistaminic drugs act in essentially the same manner. They do not interfere in any way with the immune reaction which is the basis of the allergic response, nor do they prevent this immune reaction from liberating histamine. However, they do decrease considerably the ability of histamine to affect various organs of the body: that is, the antihistamines depress the bronchiolar constrictor effect of histamine, they depress the secretory effect, and they depress the capillary dilatory effect. Obviously, if the antihistamines are given prior to the immune reaction which causes the liberation of histamine, then the histamine can have far less effect on the different organs of the body than would occur otherwise. Therefore, for optimal clinical benefit, the antihistamines should be used prophylactically or at least as soon after the beginning of an allergic state as possible, for much damage can be done by histamine in a very short period of time. However, this does not mean that the antihistamines are not of at least some value even after the allergic state has begun, for they can ameliorate further damage from subsequently produced histamine.

(H) THE EFFECT OF CORTISONE, ACTH, AND COMPOUND F ON THE ALLERGIC STATE

Experimentally, it appears that all of these compounds have approximately the same effect on the allergic state except for quantitative differences. ACTH, obviously, causes increased production of hormone by the adrenal cortex, and compound F apparently is the major hormone that is produced by the adrenal cortex. On the other hand, cortisone is one of the minor hormones produced by the adrenal cortex, but, because it can be synthesized commercially relatively easily by present technics, it is cortisone which is used clinically rather than compound F.

Cortisone and ACTH have two actions in the body which may have a bearing on their effects in allergy. First, it has been shown that these compounds slow up natural degradation

of intercellular proteinaceous compounds, such as the collagen fibrils, and thereby oppose the destructive action of the immune hypersensitive response.

Secondly, and probably far more important, is the action of adrenocortical hormones on the formation of immune bodies themselves. It has been shown in recent experimental studies that a sufficient quantity of cortisone and probably also other adrenocortical hormones can completely or almost completely oppose the production of immune bodies by the reticulo-endothelial system and lymphoid tissue.[1] At the same time the total quantity of lymphoid tissue throughout the body is greatly decreased. Furthermore, it has been shown that cortisone can greatly decrease the sensitivity of an individual to allergens by preventing the continual formation of the immune bodies which cause the basic hypersensitive response. Therefore, it is possible if not probable that the various collagen diseases such as rheumatoid arthritis, rheumatic fever, scleroderma, and so on, which have been thought to be allergic in nature for many years, are benefited by adrenocortical hormones because of suppression of immune body formation. The resulting low titer of immune bodies in turn would account for a diminished or totally absent hypersensitive response which originally brought about the collagen disease.

SUMMARY

It has been pointed out that the basic allergic reaction depends on the combination of antibody with specific allergen either on the surface of tissue cells or within the cells. This reaction in turn causes the liberation of histamine which may have either local effects or, after circulating through the body, may have generalized effects. The generalized effects, because of hereditary differences, might in some individuals predominate in the lungs, while in other individuals the dominant action might be on the circulatory system or a secretory system. An individual can be desensitized to an allergen by injecting a sufficient quantity of this allergen into the individual so that a high titer of immune bodies against the allergen will be developed. Subsequently, when an allergen enters the body by any portal, it will be neutralized by the circulating immune bodies in the body fluids before it can reach the tissues to cause the allergic response. It has also been pointed out that antihistamines do not prevent the basic immune reaction which causes the production of histamine but, instead, prevent the action of histamine on the various organs of the body. Cortisone and related compounds, on the other hand, have been shown to decrease or completely block the continual formation of immune bodies by the reticulo-endothelial system and lymphoid tissues. When the titer of these immune bodies falls to very low levels, the basic immunological reactions in the tissues which cause hypersensitive responses cannot occur.

REFERENCE

1. Germuth, F. G., Jr.; Oyama, Jori; and Ottinger, Barbara; The Mechanism of Action of 17-Hydroxy-11-Dehydrocorticosterone (Compound E) and of the Adrenocorticotropic Hormone in Experimental Hypersensitivity in Rabbits. J. Exp. Med., 94:139, 1951.

PROCTOLOGIC FACTS AND OBSERVATIONS*

By NEWTON D. SMITH, M.D.
Rochester, Minnesota

In the practice of proctology or any other medical or surgical specialty, and perhaps even in the practice of general medicine or surgery, each physician inevitably accumulates information which compels him to arrive at certain conclusions which seem to contradict what he has learned or has been told. Many times the conclusions he has reached by independent observation are at variance with those of some of the recognized authorities whose teachings seemed basically sound when first scrutinized. It is in this spirit that I present the following discourse.

The need of sigmoidoscopic examination and a physical examination prior to any anorectal surgical operation seems too well established to justify further comment. On the other hand, the consultation with the patient after these examinations does deserve consideration. Early in my medical experience I saw patients sent into a general hospital to undergo hemorrhoidectomy, excision of a fissure or fistulectomy with no more comment from the surgeon than that the scheduled

*Read in Section on Proctology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

procedure was minor surgery or that there was "nothing to it." The conclusion seemed inescapable that the lack of an adequate consultation and the resultant dearth of information in such cases left the patient poorly prepared for the events and discomforts which were to follow. Probably the worst result of this relationship of surgeon and patient seemed to be that it deprived the patient of the confidence in his surgeon which undoubtedly is important to the patient's peace of mind. It also seemed to encourage the patient to exaggerate all of the more unpleasant aspects of his convalescence.

These and other observations soon convinced me of the importance of consultation with a patient prior to the performance of any anorectal operation. Experiences like the foregoing afforded me an opportunity to be gently informative and yet frank in discussing both the postoperative discomfort and usual progress to be expected. The length of time the patient is to spend in the hospital, the portion of that time during which he will be confined to bed, the type of anesthesia to be employed and the approximate nature of the operation are some of the factors patients ask about most frequently. The usual question as to expense certainly ought to be included in this list of frequent inquiries. It would seem logical also to inform the patient about postoperative discomfort and the measures to be employed to palliate this discomfort. Moreover, it would be advantageous to discuss possible urinary symptoms and difficulty in voiding. These discomforts and minor disabilities frequently cannot be obviated.

Experience proves that a patient's confidence increases as he understands that the surgeon knows of his problems; hence, instead of becoming unreasonably uncooperative, such a patient will accept and follow advice and suggestions readily. An adequate consultation also provides the surgeon with an opportunity to inform the patient that his postoperative course may not be marked by continued improvement but that his discomfort may vary from day to day, in spite of the fact that the healing of wounds may be continuous and entirely satisfactory.

I have found the consultation to be propitious for explaining the need for and the importance of normal fecal evacuation postoperatively, and for pointing out that it may require a week for this physiologic function to resume. Most patients, when they have this information, will be much more cooperative and will dread such evacuation much less than if the circumstances had not been explained to them.

We must not lose sight of the fact that patients are understandably more interested in obtaining a satisfactory result than are the surgeons. If they are provided with sufficient information about their condition and treatment prior to operation, their attitude is more likely to be one of intelligent cooperation rather than one of passive, worried anticipation.

Accomplishment of the anorectal surgical procedure indicated in any given patient often will vary in the hands of different surgeons, but my own impression, based on observation of the work of a number of surgeons, is that the technic employed is important only when judged by the results obtained. Often, insufficient surgical procedures will produce temporarily satisfactory results, but will necessitate additional procedures to bring about a result of satisfying permanence.

There is no doubt that the ability to accomplish satisfactory surgical procedures is improved by experience and by the knowledge derived from observation and emulation of the skill of others. Experience and observation also tend to lead the surgeon, as his skill and confidence increase, to deviate from those pragmatic rules which may have seemed basic earlier in his career. It is often of interest to study the variations in technic among several surgeons working together, attacking the same types of surgical problems.

It seems safe to assume that any anorectal surgical procedure, to justify the word "adequate," should remove all pathologic tissue and should then restore the relationship of involved tissues as close to normal as surgical skill will permit. This assumption will provide a sound working basis. It may, however, be necessary to modify any procedure in this region according to the particular situation represented by the bacteria and moisture always present in the postoperative wounds.

A rule which seems inflexible is that strips of normal skin and mucous membrane must be left between the sites at which hemorrhoidal masses or other anorectal tissue are

removed at operation. On the basis of frequent inquiries on the part of visiting surgeons, I judge that this teaching still persists. Apparently, it was stated so dogmatically that many well informed surgeons still feel bound to observe it. The reason usually given for the preservation of strips of tissue in this manner is that by so doing, postoperative anorectal contraction or stricture will be avoided. Conversely, it is held that if too much tissue is removed, contraction or stricture cannot be avoided.

Superficially, the foregoing sounds reasonable, but preoperative study of some anorectal abnormalities will disclose other reasons for the development of contraction or so-called rectal stricture. For instance, the contraction which occurs in the presence of anal fissure is notorious. Such contraction often is marked, and yet most of the anorectal skin is intact when this lesion is present.

An interesting commentary is the observation that when such a lesion is present, the patient may rely upon mineral oil or cathartic agents to prevent the stool from being normally firm at the time of evacuation, in the hope that pain will thereby be avoided. The use of such agents, combined with spasm of the anal sphincter muscles in the natural splinting action of the muscles, doubtlessly provides the logical basis for the contraction which occurs. Furthermore, the fact that patients are seen who, despite the absence of any anorectal pathologic process, nevertheless resort to the continued employment of mineral oil, cathartics or enemas, with the subsequent development of anal contraction to a marked degree, would seem to indicate that the normal anal diameter is dependent upon the physiologic dilatation which occurs with the evacuation of a normal stool. Indeed, it might even be postulated that nature intended such dilatation, when it is recalled that the first portion of a normal stool is firm at the time of evacuation.

In view of the foregoing, it seems logical to conclude that the ensuring of normal stools postoperatively should provide ample anal dilatation. Furthermore, the diameter of the evacuated normal stool often appears to be greater than the diameter of any instrument a surgeon would employ to dilate the anus postoperatively, greater, in fact, than the diameter of the index finger which many surgeons frequently insert in the anus when they think dilatation is required. After this has been done, the surgeon often is complacent in the belief that since he has dilated the anus, all must be well and that a satisfactory result has been rendered certain. Then the same surgeon often will prescribe mineral oil to assure the patient of a gentle, painless fecal evacuation. Such a postoperative regime can hardly produce a predictably normal anal diameter, and actually may well explain the frequently expressed concern about anal contraction after anorectal surgical procedures.

I think that everything possible should be done to assist the patient toward the objective of a normal fecal evacuation. In my experience, an anticonstipation diet has been prescribed for those patients who presented a history of constipation; this diet usually has been fortified by a bulk-producing agent. When such agents were employed every effort was expended to be sure that a normal stool resulted, rather than a soft one. In occasional cases a small enema was employed to assist the patient, but in the majority of instances, it was found, the patient was willing and anxious to ensure an evacuation of normal stools, because the information he received at the time of his consultation provided him with an understanding of the reason for his effort.

In retrospect, I can recall a number of instances in which I thought a more satisfactory result could have been obtained if I had removed more marginal tissue, especially perianal skin, thus assuring ample drainage of the anorectal wounds. I can recall no instance in which I felt that I had removed too much anal and perianal tissues.

The postoperative convalescence of many patients who have undergone anorectal surgical operations is comparatively uneventful. Nevertheless, a little time spent with them in considering their discomforts and disabilities, and an understandable explanation of the cause of such discomforts, will assist materially in obtaining the patient's ready cooperation. Several examples will serve to illustrate this. When the patient is permitted to be out of bed after an anorectal operation, he frequently becomes concerned because the

postural change causes a sensation of the need of evacuating the bowel. After the physician examines the rectum so that he can reassure the patient that no stool is present, a matter of fact discussion will apprise the patient that the sensation he complains of results simply from engorgement of the part as a natural consequence of change of posture. It is often helpful to compare the situation to that in which a painful hand feels comfortable when supported in a sling, but beats and throbs when held with the hand dependent and the arm fully extended. It also helps to inform the patient that if the discomfort disappears when he lies down, he may rest assured that the discomfort does not result from a distended bowel. Without such counsel, some patients will go to stool frequently in an effort to expel nonexistent feces, and thus aggravate an already uncomfortable sensation.

The patient who passes feces incontinently after an anorectal operation becomes extremely perturbed. If the surgeon is reasonably certain that nothing was done at the time of the operation which would interfere with the normal function of the anal sphincter, he would be wise to give a few words of explanation which would save the patient many hours of unnecessary anxiety. Here again a simple analogy can be used: it can be explained to the patient that if he had a painful wound in the palm of his hand, he would not be able to grasp objects as promptly or satisfactorily as he did before the wound. This will help to put his mind at ease.

In some instances, patients have great difficulty in expelling feces even when the rectum actually appears to be sufficiently distended. If such a patient is permitted to try to solve his own problem without some understanding of the muscle spasm which usually occurs subsequent to anorectal operations, he may experience hours and days of fear. It is worth while to call such a patient's attention to the fact that in the presence of a wound in any portion of the body, and especially if muscles are involved, there is accompanying muscle spasm which is nature's effort to keep the part quiet. The patient may be reminded of what he has seen many times: that a wound in the lower extremity will cause a person to limp. Such an explanation will assist the patient in understanding his difficulty, with the helpful implication that it is temporary rather than permanent. Often, such advice will bring about regular defecation sooner than otherwise would be the case.

In general, the few suggestions that have been mentioned thus far are simple but worth while. At first it may appear to be time-consuming to carry out these suggestions, but I am convinced that they often will actually save time. In addition, the pleasanter relationship which they bring about between surgeon and patient will more than repay any time expended.

We now proceed to more important problems. A so-called fecal impaction occurring postoperatively is distressing to both patient and surgeon. To some it might seem that the practice of waiting until the patient's bowels function normally after an anorectal operation, before the use of any assistive measures, would increase the likelihood of impaction. Actually, however, not much needs to be done. The administration of a moderate dose of a saline cathartic agent on the third or fourth postoperative day often will serve to hold enough fluid in the intestinal tract to prevent the occurrence of a fecal impaction. The amount of saline solution administered will vary with the agent employed, but about two-thirds of the amount usually employed for purgation will suffice.

Hemorrhages which occur after anorectal surgical treatment usually can be controlled without too much difficulty, but the effect of such a complication upon the patient is difficult to estimate. His fear is often apparent. The assurance to the patient that such bleeding can be controlled, that the surgeon and his professional aids will be alert to the possibility and available at all times, that the bleeding, if it occurs, will not be serious, and finally, that healing will not be retarded thereby, will do much to relieve his apprehension.

Few proctologic textbooks have been written which fail to mention the occurrence of abscesses as postoperative complications. Some of these abscesses always will be unavoidable, but much can be done to prevent them from forming. Primarily, drainage of all anorectal wounds should be adequate and unrestricted. In addition, in the course of

the operation the surgeon should avoid suturing an incised mucosal edge into the rectal wall. Attention to this detail will prevent the anal sphincter from producing an overhanging distal edge or shelflike projection when that muscle contracts. Furthermore, it is advisable to avoid burying any tissue which may slough. Such counsel may seem rather obvious, but it requires vigilance to ensure that potentially sloughing tissue is not inadvertently buried during the operation. When an abscess does occur, it usually can be treated as any abscess spontaneously arising in this region would be treated, instead of complicating a previous anorectal operation by too much attention, too early, to the parts involved.

The postoperative care of all anorectal wounds is virtually as important as the surgical procedure itself. The actual method of postoperative treatment employed will vary greatly among different surgeons, and the value of the variety of treatments employed may be debatable, but certainly, daily observation of the patient and treatment are imperative until normal function has been established and all suture material has been removed. As I have mentioned, the chief objective of the postoperative treatment is to maintain the drainage that was established at the time of operation, because the action of the anal sphincter often will approximate edges that seemed sufficiently widely separated at the time the operation was completed. If this approximation continues, it will cause difficulty.

The patient's comfort is enhanced by the application of hot wet packs for four to six or more hours daily, an action which apparently enhances the healing of wounds. Cleansing the wounds gently with warm water after defecation also improves the patient's comfort. There is a great variety of medications which can be employed in treating anorectal wounds, but I think that any nonirritating antiseptic solution or agent which will not interfere with the healing process will prove satisfactory.

In the treatment of fistulectomy wounds, packing actually is not so important as it once was believed to be. Most proctologists now agree that merely ensuring that the resulting wound surfaces do not heal in such a way that bridging of the base of the wound occurs is sufficient. When packing is not used, the occurrence of anal deformity and incontinence is much reduced.

Anal fissures do present postoperative problems. I have seen many patients who had been operated upon previously for fissure, but who, because of an unusually prolonged time required for healing or because of continued discomfort, sought additional advice and assistance. It is often difficult to determine accurately the type of surgical procedure that was carried out originally. As a general statement, however, it can be said that, when a patient returns with a complaint after an anorectal operation, two possible faults should be watched for. The first lies in the surgical procedure; the second, in the postoperative care. It will be granted, I think, that surgical treatment offers the patient the optimal opportunity for relief from the symptoms of an anal fissure. To judge from the extent of perianal scarring among those patients with postoperative difficulty whom I have seen, it appears that frequently too little perianal skin had been removed. When that happens, the external portion of the wound will heal before that portion of the wound lying in the anal canal. As a result, there will develop what virtually amounts to another fissure.

When excision of an anal fissure has been completed, it is very possible for the appearance of the wound to be misleading. At that time the wound is much larger than it will be as soon as muscle tone has returned. Or, to cite a different possibility, the surgeon may be hesitant or timorous about removal of a sufficient amount of skin. Actually, however, there should be no reluctance whatever in removing a sufficient amount of skin at such an operation, because it is imperative to remove enough skin to ensure that the anal portion of the wound will have ample time to heal before the external portion does.

If an error in postoperative care has arisen, it may have its origin in (1) failure to observe the wound frequently enough; or (2) failure to separate daily the surfaces of the wound so as to ensure a flat wound with satisfactory distal drainage. Normally, the edges of the wound usually will be approximated by sphincteric contraction.

Patients who may seek advice from a surgeon other than the one who operated upon them are those who complain of discomfort or occasional bleeding for two to four or five months after the operation. For some inexplicable reason, many patients can understand why they may have discomfort for months after an operation on the abdomen, extremities or almost any other portion of the body, but they expect that an anorectal operation will produce a comfortable, functional, non-bleeding result within a few weeks.

Much misunderstanding such as the foregoing could be avoided easily if the surgeon scheduled to perform the operation would explain to the patient that some degree of irregular discomfort and occasional slight bleeding may be expected to occur for five or six months postoperatively. Moreover, it would be well to add that at least nine months must elapse before the anus will become as nearly normal as it ever will be. Most patients can readily understand such an explanation, but they rarely are able to reach such a conclusion by themselves, nor should they be expected to do so.

COMMENT

In presenting these facts and observations, I have had to omit some additional confirmatory evidence because of the need for brevity. I have made no attempt to derogate the earlier concepts or teachings in proctologic practice which I think are no longer valid or useful; rather, I have sought only to present a few facts and conclusions based on my own experience which may assist the surgeon to ensure more thorough removal of pathologic tissue and thus to achieve an optimal result. The suggestions I have made concerning the management of patients and the practice of the specialty in question were provoked by the many queries or misunderstandings of patients who had been operated upon previously by other surgeons and who had required additional anorectal surgical treatment and subsequent postoperative care. If, in the future, a few patients who might otherwise have experienced similar difficulties can be spared some of the unnecessary anxiety and worry that I have described, this paper will have been eminently worth while.

THE HORIZONS OF ANESTHESIOLOGY *

By R. M. S. Barrett, M.D.
Clayton, Missouri

Two decades ago the duties of the anesthesiologist consisted almost wholly of the technical ability to render a patient insensitive to the processes of surgery. That ability is still expected, but it is taken for granted; it has become of secondary importance to the accumulation of knowledge of the basic sciences, with the application of that knowledge and the information derived from the laboratory and clinical experience. To be accepted as an expert member of this specialty, one has to be a clinical physiologist and pharmacologist. That is why the horizons of anesthesiology have broadened, and why we are more comfortable sitting at the family table with the general practitioner, the surgeon, the internist and the obstetrician.

It is a hundred and ten years since Crawford Long administered the first anesthetic in Jefferson County, Georgia, and that contribution to humanity should have ushered into the medical world a host of ideas and enticed hundreds of enthusiasts. At last an agent could be used to remove consciousness temporarily during painful surgical procedures. Lullius had discovered ether in 1200 A.D., but it required 642 years for our profession to apply the discovery to human good.

Others for centuries had sought to overcome pain, one of the arch enemies of man. In 2200 B.C., Babylonian clay tablets described a paste to allay the pain of toothache. Here appeared the first human anesthetist of record; I say human, because Genesis 2:21 tells us that "God breathed into Adam a deep sleep, and he slept." The story of those who followed the Babylonians is a long one, but we could indicate some of the attempts to separate pain from the advancing knife.

Homer and Pliny referred to napenthes and helenium as "Joy bringing and sorrow easing." At that time, the surroundings of man contributed the pain relief; herbs that grew in the earth. Melampus introduced iron rust in wine (vinum ferri) and black hellebore as remedies although Hippocrates, in

*Chairman's Address, Section on Anesthesiology, Southern Medical Association, Forty-Sixth Annual Meeting, Miami, Florida, November 10-13, 1952.

the fifth century B.C., always referred to the latter as a purgative. Wine, as was opium, was an early anodyne of man and in that group I may mention mandragora, henbane, hemlock, lettuce and hops which contributed their share to pain relief, either alone or in combination.

The Middle Ages helped but little man's search for an effective anesthetic. Valerius Cordus, in the sixteenth century, described the synthesis of ether from sulphuric acid and alcohol. He noted that "It may be used in pleurisy, peripneumonia and hacking cough to draw from the lungs pus and mucus." His observations are relevant for it is possible that from the ether therapy in those conditions came its use as an anesthetic agent.

Following Long's use of ether, John Snow, of England, became our first enthusiast and specialist. He used the new drug often and became the best known "etherizer" in his country. Later, he practically abandoned the use of ether in favor of the newer agent, chloroform. And when he administered the anesthetic to Queen Victoria in 1853, he and his specialty received much publicity. The names of the other pioneers of the time are familiar to all: Wells, Hickman, Jackson, Morton, Simpson and Pirogoff. There were then, as now, too few men interested in the field.

From that time until the late 1920's, there was prolonged inertia in the specialty. The residencies were few, there were no whole areas in which many hospitals were staffed by men primarily interested in anesthesia, and only in a few metropolitan centers were some hospitals fortunate enough to have the services of an anesthesiologist. But in the last twenty years progress in this new medical field has accelerated to the point where it is growing two and one-half times faster than any other medical specialty.

The advances made so quickly have given a new horizon to the specialty. More men are interested in the field, the residencies have increased from 38 to 196 in the past ten years, and almost all medical schools have departments or sections. Now, the student in his clinical years sees many men who have preceded him, practicing the art of anesthesia, rather than the non-medical person who was universally seen before 1930.

Our American Society's membership has soared to almost 4,000, and since World War II, there has been an increasing and ever-growing demand for anesthesiologists by the surgeon, the hospital administrator and even the patient. There has been an understandable attempt on the part of organized anesthesia to increase the stature of the specialty in the field of medicine and to improve public opinion. No longer does the patient think that anesthesia means only someone with a can of ether. Articles in the press and in magazines of national distribution have informed the public at intervals of the importance of the one who puts the patient to sleep.

With this comparatively sudden mushrooming of the specialty, new responsibilities were thrust upon us. The elimination of pain during surgery is only one of them. Pain in general demands our attention; and by means of regional and sympathetic blocks, using short or long acting drugs, we may relieve the terminal pain of cancer, angina pectoris, and the pains of arthritis, to mention just a few conditions. Our studies now must include the accumulated facts concerning blood, plasma and the electrolytes. The prevention and treatment of shock is certainly one of our duties.

Therapeutic measures have been added: oxygen therapy, the treatment of asphyxia in general, infant resuscitation, convulsions, whether caused by meningitis, eclampsia, or strychnine poisoning. All these provide us with an opportunity to apply our knowledge for the patient's good.

The remarkable advances seen in surgery today would be impracticable if anesthesia had stagnated in the "can of ether" era. New methods and agents, used with a perfected technic, and based on the ever increasing knowledge of human physiology, have significantly decreased the morbidity and mortality of anesthesia and surgery. And they have enabled the surgeon to operate upon the "blue baby," the cirrhotic, the stenosed heart and the cancerous lung.

Anesthesia is now an established and indispensable specialty in medicine which has developed rapidly after a rather prolonged period of inactivity. There are some important educational and economic problems confronting us but if they are met in the same manner that the professional demand was, we can be confident the duties and responsibilities of the anesthesiologist have changed markedly in the last twenty years and with these advances, the horizon has changed and broadened.

Southern Medical Journal

JOURNAL OF THE
SOUTHERN MEDICAL ASSOCIATION

Copyright, Southern Medical Association, 1953. Material in the Southern Medical Journal, being covered by copyright, may not be reproduced in whole or in part or abstracted without permission from the publisher and then only if due credit is given.

Published monthly by the Southern Medical Association, Empire Building, Birmingham 3, Alabama. Annual subscription, $10.00. Single copies 85c each.

Entered as second-class matter at the Post Office at Birmingham, Alabama, under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized December 20, 1921.

Volume 46 JANUARY 1953 Number 1

EDITORIAL DEPARTMENT

Editor

M. Y. Dabney, M.D., Birmingham, Alabama

Associate Editors

Curtice Rosser, M.D., Dallas, Texas

Tinsley R. Harrison, M.D., Birmingham, Alabama

SOUTHERN MEDICAL ASSOCIATION
Forty-Seventh Annual Meeting
Atlanta, Georgia, October 26-29, 1953

DR. ALPHONSE McMAHON

PRESIDENT-ELECT

Well known to most Southern Medical Association members is Dr. Alphonse McMahon, distinguished internist of St. Louis, Associate Professor of Medicine at St. Louis University School of Medicine. He has been a member of the Southern Medical Association since 1925 and has been a member of its Council and Chairman of the Executive Committee of the Council and has been Chairman of its Section on Medicine. He has made valuable contributions to scientific literature, some of which were published in the JOURNAL.*

A Missourian both by birth and education, Dr. McMahon was born in St. Louis, August 4, 1895, the son of the late John Francis and Margaret Elizabeth McMahon. He took his A.B. degree at St. Louis University, graduated *magna cum laude* in 1915, received his M.D. there in 1919, and his M.A. in 1935. It will be seen that he was a very young graduate, both from college and from medical school. He began practice in St. Louis in 1921, after two years' hospital work in California, one year of which was at the Pottenger Sanitorium. He became a member of the faculty of St. Louis University School of Medicine in 1922. He is a Fellow of the American College of Physicians, a diplomate of the American Board of Internal Medicine, and a member of the American Association for the Advancement of Science.

In 1935 he joined the Medical Corps of the United States Naval Reserves, was recalled to active duty in 1942, serving as Assistant Chief of Medicine at Base Hospital Number 2 on the Island of Efate in the New Hebrides from May 1942 to October 1943, and was promoted to the rank of Commodore in 1945. He was personal physician to President Truman and his party at the historic Potsdam meeting. He maintains membership in a number of military medical organizations and is Reserve Consultant in Internal Medicine to the Surgeon-General of the United States Navy.

He is civic minded and has been a member of the St. Louis Smoke Committee and of the St. Louis Opera Guild. Being musically and dramatically talented, with an excellent voice, in the earlier years of his practice he played leading roles in amateur dramatics and devoted some time to singing. He has also been a good golfer, though his professional responsibilities have limited many of these extracurricular activities. His interest in the theater, music, golf and photography continue to be his chief means of relaxation. He has been devoted to his parents, brothers and sisters, and particularly to his mother until her death on November 16 of this year.

He is said to be St. Louis' great social disappointment because he has never married. He is the first bachelor president of the Southern Medical Association. It is generally be-

*McMahon, Alphonse: Relation of Thyrotoxicosis to Emotions. Sou. Med. J., 30:996-1002 (Oct.) 1937. ¶*McMahon, Alphonse; and Nussbaum, Robert A.: The Use and Abuse of Theophylline and Its Derivatives. Sou. Med. J., 33:1127-1140 (Nov.) 1940. ¶*McMahon, Alphonse: Medicine in the South Pacific. Sou. Med. J., 38:7-12 (Jan.) 1945. ¶*McMahon, Alphonse: Post-War Plan for Training Naval Medical Officers. Sou. Med. J., 39:13-15 (Jan.) 1946. ¶*McMahon, Alphonse; Allen, Hollis N.; Weber, Clarence J.; and Missey, Jr., W. C.: Hypercholesterolemia, Its Significance in Clinical Practice. Sou. Med. J., 44:993-1002 (Nov.) 1951.

lieved that a physician needs a wife more than other men do, that it is difficult for him to succeed in an exacting profession without a wife's undeviating help. Dr. McMahon is a noteworthy exception.

An ardent Catholic, Dr. McMahon is a member of the Catholic Physicians Guild, a fourth degree Knight of Columbus, and a former president of the Layman's Retreat League of St. Louis. In February of 1946 he flew to Rome for the Consistory of Cardinals as personal physician to the late John, Cardinal Glennon, and was with him at his death in Dublin, Ireland, a week or so later.

He is a member of Alpha Omega Alpha Honorary Medical Fraternity, Sigma Psi National Honorary Scientific Fraternity, Alpha Kappa Kappa Medical Fraternity, University Club and Bellerive Country Club. He maintains membership in a number of medical societies and has been president of the St. Louis Medical Society, the American Therapeutic Society, the Mississippi Valley Medical Society, and has been vice-president of the American Medical Association.

He is Chief of Staff of St. John's Hospital in St. Louis. His other hospital connections are with St. Mary's Group in St. Louis, and St. Luke's, Frisco Employees,' Mount St. Rose Sanitorium and St. Clement's Hospital, in Red Bud, Illinois. He is Chairman of the Board of Trustees of the Mississippi Valley Medical Society, and a Member of the Council on Scientific Assembly of the American Medical Association.

A gentleman to the core and with cultural interests, always kindly and without critical outlook upon the shortcomings of others, the new president-elect is still a man of dynamic convictions who speaks with sincerity.

SODIUM IN HYPERTENSION

Numerous investigations in recent years indicate that a relationship exists between the sodium ion and certain hypertensive states. It is generally recognized, for example, that the administration of salt to patients with toxemia in pregnancy, eclampsia, or acute glomerulonephritis, may be followed by an exacerbation of the signs and symptoms of the underlying disease.[1] The reported remissions in the wide assortment of patients with vascular disease maintained on a rice diet may be related at least in part to sodium restriction.[2] The effectiveness of sodium restriction in some types of cardiovascular disease, and ineffectiveness in others, points to a relationship between this cation and the hypertensive syndrome.[3]

Selye[4] has shown conclusively that the sodium ion is necessary for the production of experimental hypertension by desoxycorticosterone. Likewise, Tobian[5] has shown that this electrolyte is essential to the production of hypertension in certain experimental conditions.

The finding of abnormally high sodium concentrations in tissues from patients with hypertension and in animals made hypertensive for experimental purposes, appears to suggest a linkage of abnormal sodium metabolism with hypertensive states.[6]

Braum-Menendez[7] suggests that salt and water metabolism may be of more clinical significance in the regulation of normal blood pressure in the body than has previously been recognized.

Recent work by Tobian and associates[8] shows that the medial layers of human renal arteries in autopsy material from hypertensive patients have a higher sodium content than have those of normotensive patients. Likewise, these workers showed that muscle tissue in hypertensive patients possesses a similarly higher sodium content than does muscle tissue of normotensives.

The investigation of the sodium content of body fluids in hypertensive patients has revealed some interesting findings. Kylin and Elmquist[9] reported a small series of serum

1. Danowski, T. S.: Newer Concepts of the Role of Sodium in Disease. Amer. J. Med., 10:468-480 (Nov.-Apr.) 1951.
2. Kempner, W.: Treatment of Hypertensive Vascular Disease with Rice Diet. Amer. J. Med., 4:545, 1948.
3. Grollman, A.; Harrison, T. R.; Mason, J. F.; Baxter, J.; Crampton, J.; and Reichsman, F.: J.A.M.A., 129:533, 1945.
4. Selye, Hans; Stone, Helen; Timires, Paola; and Schaffenburg, C.: Amer. Heart J., 37:1009, 1949.
5. Tobian, Louis, Jr.: Quoted by Holley.[10]
6. Grollman, A.: Proc. Hypertensive Conference, Univ. of Minn., Sept. 1950.
7. Braum-Menendez, E.: The Mechanism of Hypertension Due to Desoxy Corticosterone. Quoted by Bell, E. T.: Hypertension. Minneapolis: Univ. Minn. Press, 1951.
8. Tobian, Louis, Jr.; and Binion, John: Tissue Sodium, Potassium and Magnesium in Human Hypertensive Subjects. Abstract, Amer. J. Med., 12:107 (Jan.) 1952.
9. Kylin, Eskel; and Elmquist, Helding: Acta Med. Scand., 88:507, 1936.

sodium determinations in hypertensive patients, all of which showed a small but definite elevation from the accepted normal. Holley and associates[1] reported a series of serum sodium determinations from uncomplicated hypertensive patients and compared them with a normotensive series. Serum sodium was found to be significantly higher in hypertensives than in normal individuals. Recently Johnson and co-workers[2] have determined the sodium content of the cerebrospinal fluids in 28 hypertensive patients. The values were higher than those in a series of 100 normotensives.

This accumulating evidence would appear to support the concept of adrenal participation in the production of the hypertensive syndrome, and this might offer a basis for sodium restriction therapy in this disease. It is known that adrenal cortical steroids cause retention of sodium in the body. Various instances have been reported in which hypertension was induced in patients on long term corticotropin and cortisone therapy, in which blood pressure returned to normal soon after discontinuance of therapy. This is perhaps further evidence of a hormonal linkage. Similarly, the frank clinical findings of hypertension associated with hyperadrenal cortical activity, as in Cushing's syndrome, are well known.

The final opinion must await further elucidation of facts. Further investigation no doubt will define the role of sodium in vascular disease, and delineate more specifically the sequence of physiologic events that may occur following sodium administration or withdrawal in such disease states.

1. Holley, H. L.; Elliott, H. C., Jr.; and Holland, C. M., Jr.: Serum Sodium Values in Essential Hypertension. Proc. Exp. Biol. and Med., 77:561-563, 1951.
2. Johnson, L. L.; Shaw, C. W.; Galen, W. P.; and Holley, H. L.: Cerebrospinal Fluid Sodium Values in Essential Hypertension. In press.

MIAMI MEETING

The great success of the Association's forty-sixth annual meeting was a tribute to the many interested physicians who have long enjoyed what it provides. Miami is far off-center for the states of the Southern Medical territory, and Southerners are more prone to travel in an easterly or northerly direction in November. Miami is a beautiful metropolis at all seasons, and no American city could have offered lovelier weather for a convention. The summer breezes were not too warm, yet perfect for bathing in the Atlantic and for deep sea fishing in nearby waters. The beautiful tropical vegetation of parks and homes which can be found in no other state east of the Rockies, was a delight to the eyes of visitors. Only Florida of the Southern states can offer such a climate with such lush tropical growth throughout the year.

The Dade County Medical Association, far from becoming blasé or indifferent after many large conventions, showed a fresh skill and technic in organization and management, which seemed to be implemented in large part from the innate friendliness and warm heart of its membership.

The attendance was the best in the last five years. There were 2,173 doctors of medicine, 976 women, 588 miscellaneous (nurses, technicians, exhibitors, etc.), a grand total of 3,737.

This was in the face of increasing competition from the numerous local and specialists' meetings which convene very nearly every month of the year. It may be taken as an indication of the quickening trend of medical awakening in the South, and of the need for conventions in one city of the numerous groups to study together the varying methods of each, and to sharpen the wits and broaden the outlook by association with those of divergent specialties and frequently opposite viewpoints.

Special thanks are due the President of the Dade County Medical Association, Dr. Ralph S. Sappenfield, the General Chairman of the local committee on arrangements, Dr. Edward W. Cullipher, and their active and effective subcommittees.

The Woman's Auxiliary as usual functioned with talent and hospitality. The many women guests were made to feel most welcome and an integral part of the gathering, a place which they have well won over the years.

Awards for scientific exhibits were as follows: first award to Dr. Roy G. Klepser and Dr. James F. Berry, of Georgetown University

School of Medicine, Washington, D. C., for their exhibit on the diagnosis and surgical management of chylothorax; the second to Dr. D. G. Miller, Jr., of Morgantown, Kentucky, for his exhibit on rural general practice without a hospital; and third to Dr. Parke G. Smith and Dr. Jack A. McKenzie of Miami for their exhibit on diagnosis and therapy of prostatic carcinoma.

The newly-elected officers of the Association are President, Dr. Walter C. Jones, Miami, Florida; President-Elect, Dr. Alphonse McMahon, St. Louis, Missouri; First Vice-President, Dr. R. L. Sanders, Memphis, Tennessee; and Second Vice-President, Dr. E. W. Cullipher, Miami, Florida.

The meeting adjourned to reconvene in Atlanta, Georgia, October 26-29, 1953.

GROUP DISABILITY INSURANCE

The Southern Medical Association at the Miami meeting adopted a group disability insurance program for its members, to cover sickness, accident and hospitalization. All members of the Southern Medical Association under seventy years of age may enroll in this insurance plan. The rate and policy benefits are very liberal. Even if a member has other coverage, if he has taken a unit in some other organization, he is eligible to take another unit in the Southern Medical Association plan.

The insurance will be underwritten by Continental Casualty Company of Illinois, one of the largest and strongest companies in the United States writing this kind of insurance coverage. The plan will be administered for the Association by Charles O. Finley and Company, Professional Group Disability Underwriters, 310 South Michigan Avenue, Chicago 4, Illinois. The initial registration period is January and February. During that period fifty per cent of the members of the Southern Medical Association must be enrolled to make the plan effective.

In December each member received a formal announcement and a brochure from the Association office giving full information about the plan. An application form accompanied the brochure. All members are urged to give careful consideration to this matter and mail application form promptly.

TWENTY-FIVE YEARS AGO

From Journals of 1928

Cortical Hormone of the Suprarenals.[1]—That the suprarenal glands are indispensable to life is generally conceded. Either they counteract or destroy substances detrimental to the organism that may arise in one way or another, or they supply one or more products that are essential to the functions of the body. . . . In a recent issue, reference was made to investigations of Rogoff and Stewart at Cleveland, indicating that extracts of the suprarenal cortex prolonged the life of animals deprived of their suprarenals. Confirmatory evidence has since been supplied by Hartman, MacArthur and Hartman of the University of Buffalo . . . . the suprarenal cortex . . . may soon disclose its potent constituent. . . . The Buffalo physiologists have coined a name for the cortical hormone. They propose to call it "cortin."

Tubal Patency.[2]—Uterotubal insufflation . . . was devised in November, 1919 . . . as a method of determining the fact of tubal patency without the necessity of resorting to laparotomy. It has since undergone several developments. The addition of manometric and volumetric control has made it possible to elicit diagnostic data that must escape the simple unaided introduction of gas through the uterus and tubes into the peritoneal cavity. Within the past two years I have studied the behavior of the gas insufflation by means of an attached kymograph. . . . It has been possible to arrive at a better prognosis, . . . particularly in those instances in which the initial pressure rise was above 100 mm. . . . . The results of research on the physiology of the fallopian tubes in recent years have demonstrated a definite causal relation between ovarian function and tubal motions. . . . Tubal function in practically all animals is heightened at the time of ovulation, and is less marked at other phases of the menstrual cycle or of estrus . . . . in some of the cases of prolonged amenorrhea, tubal peristalsis is well preserved.

Sex Hormone Blood Test.[3]—In women with normal sex cycle, more and more of the female sex hormone accumulates in the circulating blood until menstruation sets in. With the onset of menstruation as well as with the onset of pregnancy, the hormone disappears from the circulating blood. . . . Sterilities probably fall into two classes, the first with normal cycle, the second with depressed function. . . . Death of the fetus after the twelfth week can be recognized by the blood test.

1. Editorial. The Cortical Hormone of the Suprarenals. J.A.M.A., 90:34 (Jan. 7) 1928.

2. Rubin, I. C.: Tubal Patency. J.A.M.A., 90:99 (Jan. 14) 1928.

3. Frank, Robert T.; and Goldberger, M. A.: Clinical Data Obtained with the Female Sex Hormone Blood Test. J.A.M.A., 90:106 (Jan. 14) 1928.

OFFICERS

The following is a complete roster of the officers of the Southern Medical Association and of organizations meeting conjointly for 1952-1953.

President—Dr. Walter C. Jones, Miami, Fla.

President-Elect—Dr. Alphonse McMahon, St. Louis, Mo.

First Vice-President—Dr. R. L. Sanders, Memphis, Tenn.

Second Vice-President—Dr. E. W. Cullipher, Miami, Fla.

Secretary-Manager (Secretary, Treasurer and General Manager)—Mr. C. P. Loranz, Birmingham, Ala.

Assistant Secretary-Manager—Mr. Robert F. Butts, Birmingham, Ala.

Editor of Journal—Dr. M. Y. Dabney, Birmingham, Ala.

Associate Editors—Dr. Tinsley R. Harrison, Birmingham, Ala.; Dr. Curtice Rosser, Dallas, Tex.

Assistant Editor—Mrs. Eugenia B. Dabney, Birmingham, Ala.

Councilors—Dr. Fred E. Woodson, Chairman, Tulsa, Okla.; Dr. Olin S. Cofer, Vice-Chairman, Atlanta, Ga.; Dr. Lee F. Turlington, Birmingham, Ala.; Dr. Lowry H. McDaniel, Tyronza, Ark.; Dr. Helen Gladys Kain, Washington, D. C.; Dr. C. A. Andrews, Tampa, Fla.; Dr. A. Clayton McCarty, Louisville, Ky.; Dr. Edwin H. Lawson, New Orleans, La.; Dr. J. Morris Reese, Baltimore, Md.; Dr. Lamar Arrington, Meridian, Miss.; Dr. Grayson Carroll, St. Louis, Mo.; Dr. H. L. Brockmann, High Point, N. C.; Dr. W. Thomas Brockman, Greenville, S. C.; Dr. Charles R. Thomas, Chattanooga, Tenn.; Dr. Milford O. Rouse, Dallas, Tex.; Dr. Waverly R. Payne, Newport News, Va.; Dr. Cecil O. Post, Clarksburg, W. Va. *Executive Committee of Council*—Dr. Fred E. Woodson, Chairman; Dr. Olin S. Cofer, Vice-Chairman; and Dr. Milford O. Rouse. Ex-officio members—Dr. Walter C. Jones, President; Dr. Alphonse McMahon, President-Elect; and Dr. R. L. Sanders, First Vice-President.

Board of Trustees (All are Past Presidents)—Dr. E. L. Henderson, Chairman, Louisville, Ky.; Dr. Lucien A. LeDoux, New Orleans, La.; Dr. James A. Ryan, Covington, Ky.; Dr. Hamilton W. McKay, Charlotte, N. C.; Dr. Curtice Rosser, Dallas, Tex.; and Dr. R. J. Wilkinson, Huntington, W. Va.

Section on General Practice—Dr. Stanley A. Hill, Chairman, Corinth, Miss.; Dr. James H. Byram, Vice-Chairman, Atlanta, Ga.; Dr. Walter W. Sackett, Jr., Secretary, Miami, Fla.

Section on Medicine—Dr. George T. Harrell, Chairman, Winston-Salem, N. C.; Dr. Vince Moseley, Chairman-Elect, Charleston, S. C.; Dr. Daniel L. Sexton, Vice-Chairman, St. Louis, Mo.; Dr. R. Wayne Rundles, Secretary, Durham, N. C.

Section on Gastroenterology—Dr. David Cayer, Chairman, Winston-Salem, N. C.; Dr. John M. Rumball, Vice-Chairman, Coral Gables, Fla.; Dr. John S. Atwater, Secretary, Atlanta, Ga.

Section on Neurology and Psychiatry—Dr. George S. Fultz, Jr., Chairman, Richmond, Va.; Dr. Harry M. Murdock, Vice-Chairman, Baltimore, Md.; Dr. James G. Galbraith, Secretary, Birmingham, Ala.

Section on Pediatrics—Dr. Preston A. McLendon, Chairman, Washington, D. C.; Dr. D. Lesesne Smith, Vice-Chairman, Spartanburg, S. C.; Dr. William G. Crook, Secretary, Jackson, Tenn.

Section on Pathology—Dr. H. R. Pratt-Thomas, Chairman, Charleston, S. C.; Dr. Bela Halpert, Vice-Chairman, Houston, Tex.; Dr. A. J. Gill, Secretary, Dallas, Tex.

Section on Radiology—Dr. Robert D. Moreton, Chairman, Fort Worth, Tex.; Dr. Stephen W. Brown, Vice-Chairman, Augusta, Ga.; Dr. J. Cash King, Secretary, Memphis, Tenn.

Section on Dermatology and Syphilology—Dr. Martin F. Engman, Jr., Chairman, St. Louis, Mo.; Dr. Joseph M. Hitch, Vice-Chairman, Raleigh, N. C.; Dr. Ray O. Noojin, Secretary, Birmingham, Ala.

Section on Allergy—Dr. Ralph Bowen, Chairman, Houston, Tex.; Dr. George W. Owen, Vice-Chairman, Jackson, Miss.; Dr. H. Whitney Boggs, Secretary, Shreveport, La.

Section on Physical Medicine and Rehabilitation—Dr. Sedgwick Mead, Chairman, St. Louis, Mo.; Dr. Edward M. Krusen, Jr., Vice-Chairman, Dallas, Tex.; Dr. Harriet E. Gillette, Secretary, Atlanta, Ga.

Section on Industrial Medicine and Surgery—Dr. C. U. Dernehl, Chairman, Texas City, Tex.; Dr. Richard M. Adams, Vice-Chairman, Shreveport, La.; Dr. Mac Roy Gasque, Secretary, Pisgah Forest, N. C.

Section on Surgery—Dr. John V. Goode, Chairman, Dallas, Tex.; Dr. John D. Martin, Jr., Vice-Chairman, Emory University, Ga.; Dr. Donald W. Smith, Secretary, Miami, Fla.

Section on Orthopedic and Traumatic Surgery—Dr. W. Kelly West, Chairman, Oklahoma City, Okla.; Dr. R. Beverly Raney, Vice-Chairman, Chapel Hill, N. C.; Dr. S. Benjamin Fowler, Secretary, Nashville, Tenn.

Section on Gynecology—Dr. H. Hudnall Ware, Jr., Chairman, Richmond, Va.; Dr. William T. Black, Jr., Vice-Chairman, Memphis, Tenn.; Dr. Willis E. Brown, Secretary, Little Rock, Ark.

Section on Obstetrics—Dr. W. C. Winn, Chairman, Richmond, Va.; Dr. Leo J. Hartnett, Vice-Chairman, St. Louis, Mo.; Dr. Garth L. Jarvis, Secretary, Galveston, Tex.

Section on Urology—Dr. Harold A. O'Brien, Chairman, Dallas, Tex.; Dr. Milton M. Coplan, Vice-Chairman, Miami, Fla.; Dr. A. Keller Doss, Secretary, Fort Worth, Tex.

Section on Proctology—Dr. Claude G. Mentzer, Chairman, Miami, Fla.; Dr. Edgar Boling, Vice-Chairman, Atlanta, Ga.; Dr. A. M. Phillips, Secretary, Macon, Ga.

Section on Ophthalmology and Otolaryngology—Dr. K. W. Cosgrove, Chairman, Little Rock, Ark.; Dr. E. W. Rucker, Jr., Chairman-Elect, Birmingham, Ala.; Dr. F. Phinizy Calhoun, Jr., Vice-Chairman, Atlanta, Ga.; Dr. F. A. Holden, Secretary, Baltimore, Md.

Section on Anesthesiology—Dr. Albert J. Ochsner, II, Chairman, Alexandria, La.; Dr. David A. Davis, Vice-Chairman, Chapel Hill, N. C.; Dr. Earl F. Weir, Secretary, Dallas, Tex.

Section on Public Health—Dr. J. W. R. Norton, Chairman, Raleigh, N. C.; Dr. Robert W. Ball, Vice-Chairman, Columbia, S. C.; Dr. Kirk T. Mosley, Secretary, Oklahoma City, Okla.

Section on Medical Education and Hospital Training—Dr. James A. Greene, Chairman, Houston, Tex.; Dr. William H. McCord, Vice-Chairman, Charleston, S. C.; Dr. John B. Truslow, Secretary, Richmond, Va.

Women Physicians of the Southern Medical Association—Dr. Eva F. Dodge, Chairman, Little Rock, Ark.; Dr. May Agness Hopkins, Vice-Chairman, Dallas, Tex.

American College of Chest Physicians, Southern Chapter (meeting conjointly with the Southern Medical Association)—Dr. Duane Carr, President, Memphis, Tenn.; Dr. John S. Harter, First Vice-President, Louisville, Ky.; Dr. George R. Hodell, Second Vice-President and Chairman of Program Committee, Houston, Tex.; Dr. Alfred Goldman, Secretary-Treasurer, St. Louis, Mo.

Southern Gynecological and Obstetrical Society (meeting conjointly with the Southern Medical Association)—Dr. W. Z. Bradford, President, Charlotte, N. C.; Dr. W. O. Johnson, President-Elect, Louisville, Ky.; Dr. W. C. Winn, Secretary-Treasurer, Richmond, Va.

Southern Society of Cancer Cytology (meeting conjointly with the Southern Medical Association)—Dr. F. Bayard Carter, President, Durham, N. C.; Dr. M. Y. Dabney, Vice-President, Birmingham, Ala.; Dr. J. Ernest Ayre, Executive Secretary, Miami, Fla.

Southern Electroencephalographic Society (meeting conjointly with the Southern Medical Association)—Dr. I. S. Zfass, President, Richmond, Va.; Dr. Samuel C. Little, Vice-President, Birmingham, Ala.; Dr. Don L. Winfield, Secretary-Treasurer, Memphis, Tenn.

Woman's Auxiliary to the Southern Medical Association—Mrs. Richard F. Stover, President, Miami, Fla.; Mrs. Stanley A. Hill, President-Elect, Corinth, Miss.; Mrs. Lehman W. Williams, First Vice-President, Savannah, Ga.; Mrs. Fred W. Horn, Second Vice-President, Dallas, Tex.; Mrs. Edward R. Hipp, Third Vice-President, Charlotte, N. C.; Mrs. Louis K. Hundley, Recording Secretary, Pine Bluff, Ark.; Mrs. Nelson A. Murray, Corresponding Secretary, Jacksonville, Fla.; Mrs. John O'Connell, Treasurer, St. Louis, Mo.; Mrs. Maynard R. Emlaw, Historian, Richmond, Va.; Mrs. Robert F. Thompson, Parliamentarian, El Paso, Tex.

President's Page

To the Members of the Southern Medical Association:

The Forty-Sixth Annual Meeting of the Southern Medical Association in Miami in November was a success. We of Miami and Dade County are grateful for the excellent scientific programs presented by the various sections and the many expressions of gratitude from various members for their enjoyable stay. The weatherman did a superb job!

A review of the scientific programs and exhibits arouses a sense of pride in the great work your Association is doing to promote scientific medicine, particularly of interest from a clinical standpoint. Your officers and Council try to screen carefully all papers and exhibits before presentation. Occasionally a mistake may be made. A few criticisms have been received and these are appreciated. Such criticisms will be utilized to try to improve the calibre of future scientific work.

The Council secured an outstanding contract of group disability insurance for the protection of its members. By taking concerted action the individual gains certain advantages which cannot be obtained under ordinary individual policies. It provides the most comprehensive coverage at the lowest possible premium. When you receive your enrollment card study the plan, then promptly return the signed card. This insurance will be made effective on or before March 1, 1953, the charter period being January 1 to March 1, 1953. For the low rates and high benefits to become effective a minimum of fifty per cent of all members under 70 and in active practice must be enrolled. This makes available this insurance regardless of health history. Although you may be enrolled in a similar group you are still eligible for enrollment in this program and thus your benefits may be doubled or trebled.

There are hundreds of physicians in our territory eligible for membership in the Southern Medical Association. We have now some eight thousand members. Perhaps your confrere would like to join. Why not ask a doctor friend to become a member? We should increase our membership to at least ten thousand this year and this is possible if we try.

I wish for each of you a successful happy year with progress in all phases of medicine.

WALTER C. JONES, M.D., President

Miami, Florida, January 1, 1953

Book Reviews

A Textbook of Clinical Pathology. Edited by Seward E. Miller, M.D., Medical Director, United States Public Health Service; Chief, Division of Occupational Health, Washington, D. C. (Formerly edited by Roy R. Kracke and Francis P. Parker.) Fourth Edition. 1060 pages, illustrated. Baltimore: The William and Wilkins Company, 1952. Price $9.00.

This is the fourth edition of a standard text on clinical pathology of which the editor of the first edition was the late Dr. Roy R. Kracke. The new edition is a collaboration of eight contributors. Two are from the South, namely, Dr. L. W. Diggs of the University of Tennessee College of Medicine, Memphis, and Dr. Ralph McBurney of the Medical College of Alabama, Birmingham.

Since the designation "clinical pathology" means different things to different persons, it should be said that the fields covered consist of hematology, blood grouping, blood chemistry, immunology, liver and renal function tests, microbiology, examination of body fluids, assay of chemotherapeutic and antibiotic agents and of vitamins.

The book emphasizes the evaluation and significance of laboratory diagnostic procedures, and presents the basic scientific facts. In the presentation of procedures only those portions are detailed which are usually performed by a medical student, intern, resident or practicing physician. This feature makes the volume one of great value to the practicing physician who can use it as a reference book in connection with his practice or as a text to bring himself up to date with modern clinical laboratory procedures.

Advances in Medicine and Surgery. From the Graduate School of Medicine of the University of Pennsylvania. 441 pages, with 43 figures. Philadelphia and London: W. B. Saunders Company, 1952. Price $8.00.

In 1950, the Graduate School of Medicine of the University of Pennsylvania, one of the country's outstanding postgraduate teaching centers, organized an integrated course which was to provide an evaluation of recent medical advances. In this book, the major part of the course has been published. Many contributors have combined their efforts in presenting ten symposia on a wide variety of subjects which were selected because of notable progress and current interest in them. The topics include the present status of adrenal cortical hormones; the role of potassium in health and disease; treatment of hypertension; preoperative evaluation and preparation of patients; thrombo-embolism; pulmonary infections; relief of pain; cancer; viral diseases; and functional disorders.

Each symposium consists of four to seven papers, and fundamentals as well as clinical applications are considered, with special emphasis on present day work. The title of the book is a trifle confusing since all advances described have, of course, not emanated from this school. However, some original research on adrenal hormones, evaluation of newer drugs in the treatment of hypertension, and hypopotassemia has been incorporated. Among the more helpful and practical chapters may be mentioned one on "Evaluation and Preparation of Patients with Cardiac Disease" and on "The Use of Anticoagulants in Thromboembolic Disease." Much of this material is not readily available in textbooks.

Ophthalmic Plastic Surgery. By Sidney A. Fox, M.S. (Ophth.), M.D., F.A.C.S., Assistant Clinical Professor of Ophthalmology, New York University Post-Graduate School, New York. 290 pages with illustrations. New York: Grune & Stratton, Inc., 1952. Price $15.00.

The author's frequent contributions to the eye journals of his wartime experiences are well known and in this volume of 290 pages, he has organized and consolidated them with many other contributions and efforts. This is the first book devoted exclusively to the subject of the lids and adnexa (the globe is considered indirectly) since Spaeth's book, "Newer Methods of Ophthalmic Plastic Surgery," was published in 1925.

Dr. Fox's style is lucid, and he writes with a dry humor. The reviewer for one wishes he had given himself greater freedom in this way and avoided that bane of many surgical texts, direct quotations.

Beginning with an interesting presentation of the surgical anatomy of the lids and adnexa, pointing out that the brow is the stationary defender of the globe and reflexly acting lids are the mobile defenders, the author proceeds to consider the fundamental of ophthalmic plastic surgery. Simpler plastic procedures are then described, and more complex repairs are presented until the final section in which lid reconstruction is described and illustrated.

At many United States graduate programs in ophthalmology, experience in plastic lid surgery is not very detailed and this is another book that will help to fill the gap in the residents' and ophthalmologists' knowledge. It is amply illustrated as such a book must be if it is to accomplish its purpose. Simple drawings and excellent photographs show both the author's skill and the difficulties of obtaining a superior result after massive trauma.

Diabetes and Pregnancy. By Ralph A. Reis, B.S., M.D., F.A.C.S., Professor, Obstetrics and Gynecology, Northwestern University Medical School; Edwin J. DeCosta, B.S., M.D., F.A.C.S., Assistant Professor, Obstetrics and Gynecology, Northwestern University Medical School; and M. David Allweiss, B.S., M.D., Associate in Medicine, Northwestern University Medical School, Chicago, Illinois. 77 pages. Springfield, Illinois: Charles C. Thomas, Publisher, 1952. Price $2.50.

This monograph deals effectively with all the possible problems of the pregnant diabetic. Included are the pre-diabetic state, diabetes in pregnancy and the

proper management of the newborn infant of the diabetic mother. The impression of some inconsistencies is gained because the authors appear to be somewhat dogmatic at times and at others seem to draw conclusions on the basis of their own modest series of cases, which conclusions may not be completely justified. However, they give generous recognition to the opposing points of view in these instances by frequent references to the literature.

On the whole the approach to the problems of recognition, diagnosis and management of both the diabetic and obstetric abnormalities are discussed on a sound, practical and workable basis. The omission of the usual bulk of theoretical and academic material makes for outstanding clarity in the presentation of the text.

Pediatric X-Ray Diagnosis. A textbook for students and practitioners of pediatrics, surgery and radiology. By John Caffey, A.B., M.D., Professor of Clinical Pediatrics, College of Physicians and Surgeons, Columbia University; Attending Pediatrician and Roentgenologist, Babies Hospital and Vanderbilt Clinic, New York, New York; Consulting Pediatrician, Grasslands Hospital, Westchester County, New York and New Rochelle Hospital, New Rochelle, New York; Consulting Roentgenologist, Orange Memorial Hospital, Orange, New Jersey; Consultant in Pediatric Roentgenology, The New York Hospital, New York. Second Edition. Chicago: The Year Book Publishers, 1952. Price $22.50.

This is the second edition of this voluminous text within five years which should indicate the high esteem with which the first edition was held. The author occupies a somewhat unique position in that in addition to his position as Professor of Clinical Pediatrics at the College of Physicians and Surgeons, Columbia University and Attending Pediatrician and Roentgenologist to the Babies Hospital, he is considered the court of last appeals in x-ray diagnosis by pediatricians all over the United States. One of the illustrations is of a case of sickle cell anemia from the Hillman Hospital in Birmingham, Alabama, which shows his widespread influence.

This book not only fulfills the need for a reference but the text is so readable and the clinical aspects are so emphasized that as a clinical exposition on pediatrics it is highly desirable. In reading the preface to this second edition it is striking that some twelve additional diseases were added that were not in the edition of only five years ago. These are in addition to the ample coverage of congenital heart disease, the importance of which has developed rapidly.

The cases as presented were selected for the greater part from those presented at special staff rounds at the Babies Hospital where every phase of the patient's disease was reviewed. This correlation of the x-ray films with the history, the physical examination, laboratory reports and in some cases the autopsy study, completes the accuracy that can be accomplished in no better way.

The inclusion of the x-ray machine in many physicians' offices imposes a responsibility of accuracy in interpreting films that formerly rested on those confining their practice to x-ray diagnosis. To those who have such equipment the book would seem a necessity and to those who wish to know as much more about pediatrics as the x-ray can teach, it is unique.

The Pathology of Diabetes Mellitus. By Shields Warren, M.D., Sc.D., Departments of Pathology of the New England Deaconess Hospital and the Harvard Medical School, Boston, Massachusetts; Director, Division of Biology and Medicine, U. S. Atomic Energy Commission, and Phillip M. LeCompte, M.D., Departments of Pathology of the Faulknew Hospital and the Harvard Medical School, Boston, Massachusetts. 336 pages, illustrated. Third Edition, revised. Philadelphia: Lea & Febiger, 1952. Price $7.50.

Pathology may be restricted to the morbid changes brought about by disease or may encompass a study of disease in all its relations, its nature and the functional and structural alterations it produces. The term is employed in the latter sense in this third edition.

It is not for the pathologist alone; it is for the clinician as well and for every student who seeks a clearer understanding of the anatomical and physiologic disturbances which cause and are caused by a disease of many variants and facets, diabetes mellitus.

Three decades have passed since the discovery of insulin brought a life-saving drug to the practicing physician and opened wide the door for the research investigator, but they have resolved few of the controversies and questions which surround diabetes. The Unitarian nature, the etiology, the basis for and the nature of the degenerative lesions all remain unsettled. Amid the controversy the authors have remained scrupulously fair. They have presented and often critically evaluated the available material, both clinical and experimental, and they have indicated well the limits of present day knowledge.

Books Received

Metabolic Interrelations: With Special Reference to Calcium. Transactions of the Fourth Conference, January 7-8, 1952, New York, New York. Edited by Edward C. Reifenstein, Jr., M.D., Director, Oklahoma Medical Research Institute and Hospital, Oklahoma City, Oklahoma. 262 pages with illustrations. New York: Josiah Macy, Jr. Foundation Publications, 1952. Price $4.50.

Rheumatic Diseases: Diagnosis and Treatment. By Eugene F. Traut, M.D., F.A.C.P., Associate (Rush) Clinical Professor of Medicine, University of Illinois. 942 pages with 192 illustrations. St. Louis: The C. V. Mosby Company, 1952. Price $20.00.

Introduction to the Interpretation of the Electrocardiogram. With sixty-one plates illustrating the more important deviations from the normal, selected from the files of the Michael Reese Hospital. By Louis N. Katz, A.M., M.D., Director, Cardiovascular Department, Medical Research Institute, and Attending Physician, Michael Reese Hospital, Chicago; Richard Langendorf, M.D., Research Associate, Cardiovascular Department, Medical Research Institute; and Alfred Pick, M.D.,

Assistant Cardiographer and Research Associate, Cardiovascular Department, Medical Research Institute, Michael Reese Hospital, Chicago. 78 pages. Chicago: The University of Chicago Press, 1952. Price $2.50.

Advances in Internal Medicine. Edited by William Dock, M.D., Long Island College of Medicine, Brooklyn, and I. Snapper, M.D., The Mount Sinai Hospital, New York. Volume V. 464 pages with illustrations. Chicago: The Year Book Publishers, Inc., 1952. Price $10.50.

Congenital Anomalies of the Heart and Great Vessels. By Maurice A. Schnitker, B.S., M.D., F.A.C.P., Lt. Col., A.U.S., Medical Consultant, Pacific Theater, World War II; Director of Medicine, St. Vincent's Hospital and Toledo State Hospital. 306 pages with illustrations. New York: Oxford University Press, 1952. Price $8.00.

Blood Clotting and Allied Problems. Transactions of the Fifth Conference, January 21 and 22, 1952, New York, New York. Edited by Joseph E. Flynn, M.D., Associate Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York, New York. 368 pages with illustrations. New York: Josiah Macy, Jr. Foundation Publications, 1952. Price $4.95.

The White Plague. Tuberculosis, Man and Society. By Rene and Jean Dubos. 277 pages. Boston: Little, Brown and Company, 1952. Price $4.00.

Disorders of the Circulatory System. A Symposium Presented at the Twenty-Fourth Graduate Fortnight of The New York Academy of Medicine, October Eighth to Nineteenth, 1951. Edited by Robert L. Craig, M.D. 305 pages with illustrations. New York: The Macmillan Company, 1952. Price $5.50.

Annotated Bibliography of Vitamin E, Volume II, 1950 and 1951. Compiled by Philip L. Harris and Wilma Kujawski of The Research Laboratories of Distillation Products Industries, Rochester, New York. 106 pages. New York: The National Vitamin Foundation, Incorporated, 1952. Price $2.00.

Textbook of Surgery. Edited by H. F. Moseley, M.A., D.M., M.Ch. (Oxon), F.A.C.S., F.R.C.S. (Eng.), F.R.C.S. (C), Assistant Professor of Surgery, McGill University; Associate Surgeon, Royal Victoria Hospital, Montreal, Canada. 896 pages with 460 illustrations and 46 color plates. St. Louis: The C. V. Mosby Company, 1952. Price $15.00.

The Principles and Practice of Medicine. A Textbook for Students and Doctors. By L. S. P. Davidson, B.A. Cantab., M.D., F.R.C.P.Ed., F.R.C.P.Lond., M.D.Oslo, Physician to H.M. the Queen of Scotland, Professor of Medicine and Clinical Medicine, University of Edinburgh. 919 pages with illustrations. Edinburgh and London: E. & S. Livingstone Ltd., 1952. Baltimore: The Williams and Wilkins Company. Price $6.75.

Emergencies in Medical Practice. Edited by C. Allan Birch, M.D., F.R.C.P., Physician, Chase Farm Hospital, Enfield. Third Edition. 587 pages with 143 illustrations, 15 in color. Edinburgh and London: E. & S. Livingstone Ltd., 1952. Baltimore: The Williams and Wilkins Company. Price $7.00.

B-Vitamins for Blood Formation. By Thomas H. Jukes, Ph.D., Lederle Laboratories Division, American Cyanamid Company, Pearl River, New York. 113 pages. Springfield, Illinois: Charles C. Thomas, Publisher, 1952. Price $4.00.

Psychiatric Aide Education. By Bernard H. Hall, M.D.; Mary Gangemi, R.N., Litt.M.; V. L. Norris, A.B.; Vivienne Hutchens Vail, A.B., P.A.; Gordon Sawatsky, A.B., P.A. The report on an experiment conducted by The Menninger Foundation in cooperation with The Topeka State Hospital under a grant from The Rockefeller Foundation. 168 pages. New York: Grune & Stratton, 1952. Price $5.75.

Psychology of Physical Illness. Psychiatry Applied to Medicine, Surgery and the Specialties. Edited by Leopold Bellak, M.D., Clinical Assistant Professor of Psychiatry, New York Medical College, Flower and Fifth Avenue Hospitals, New York City. 243 pages. New York: Grune & Stratton, Inc., 1952. Price $5.50.

Dermatology: Essentials of Diagnosis and Treatment. By Marion B. Sulzberger, M.D., Professor and Chairman, Department of Dermatology and Syphilology, New York University Post-Graduate Medical School; and Jack Wolf, M.D., Associate Professor of Clinical Dermatology and Syphilology, New York University Post-Graduate Medical School. 592 pages with illustrations. Chicago: The Year Book Publishers, Inc., 1952. Price $10.00.

Practical Blood Grouping Methods. A Manual of Immunohematology. By Robert L. Wall, M.D., Department of Research Medicine, The Ohio State University Hospital, Columbus, Ohio. 175 pages. Springfield, Illinois: Charles C. Thomas, Publisher, 1952. Price $5.00.

The Rockefeller Foundation Annual Report 1951. Chester I. Barnard, President. 557 pages with illustrations. New York: The Rockefeller Foundation, 1952.

Operating Room Technic. St. Mary's Hospital, Rochester, Minnesota. Fourth Edition. 345 pages with illustrations. Philadelphia: W. B. Saunders Company, 1952.

1951 Annual Report of the John and Mary R. Markle Foundation. George Whitney, President. 83 pages. New York: The John and Mary R. Markle Foundation, 1952.

The First Hundred Years of the Mount Sinai Hospital of New York: 1852-1952. By Joseph Hirsh and Beka Doherty. 364 pages with illustrations. New York: Random House, 1952. Price $5.00.

Southern Medical News

ALABAMA

Dr. C. P. Rhodes, Director of Memorial Center for Cancer and Allied Diseases and of the Sloan-Kettering Institute, New York, New York, addressed the Jefferson County Medical Society, Birmingham, on Monday, December 15, his subject being "Progress in Cancer Control."

Dr. Harvey B. Searcy, Tuscaloosa, has been elected President of the Tuscaloosa Rotary Club for 1953.

At the annual meeting of the Southern Medical Association in Miami, Florida, early in November Dr. E. W. Rucker, Jr., Birmingham, was elected Chairman-Elect of the Section on Ophthalmology and Otolaryngology, Dr. Ray O. Noojin, Birmingham, was elected Secretary of the Section on Dermatology and Syphilology, and Dr. James G. Galbraith, Birmingham, was elected Secretary of the Section on Neurology and Psychiatry.

At the annual meeting of the Southern Electroencephalographic Society, meeting conjointly with the Southern Medical Association at Miami, Florida, in early November Dr. Samuel C. Little, Birmingham, was elected Vice-President.

At the annual meeting of the Jefferson County Medical Society held early in December, Dr. Edgar Givhan, Birmingham, was elected President; Dr. E. B. Pitts, Birmingham, was elected Vice-President; Dr. John L. Carmichael, Birmingham, was elected to the Board of Censors, and Dr. Landon Timberlake and Dr. Ralph Smith were elected to membership on the Grievance Committee.

Birmingham Baptist Hospital, Birmingham, has elected to its medical staff Dr. S. R. Terhune, president; Dr. J. W. Underwood, vice-president; and Dr. C. C. Blackwell, secretary.

Druid City Hospital, Tuscaloosa, a new $3,197,000 eight-story, 240-bed hospital, was opened for operation on December 11. It was constructed under the provisions of the Hill-Burton hospital aid act, the local share of the cost being paid by a one-cent city and county sales tax. It will be operated jointly by the Tuscaloosa city and county governments. A nurses home is under construction and application has been made for erection of a public health center as well as a tuberculosis sanitarium. These buildings when completed, together with the Veterans Administration Hospital and Bryce Hospital, a mental state institution, at Tuscaloosa will be a great medical and health center.

ARKANSAS

Arkansas Chapter of the American College of Surgeons has elected Dr. W. G. Cooper, Little Rock, president; and Dr. Peter O. Thomas, Little Rock, secretary.

Dr. G. Allen Robinson, formerly of New York, has opened offices in Harrison for the practice of radiological therapy.

Dr. Ralph A. Downs and Dr. Cecil F. Boulden have joined the staff of the Cooper Clinic, Fort Smith, Dr. Downs practicing urology and Dr. Boulden internal medicine.

Dr. Charles Wallis, formerly of Ola, has opened offices at Des Arc for the practice of medicine.

Continued on page 34

prolonged relief from nasal congestion within 2 minutes with just 2 drops of

Privine® hydrochloride **0.05 %**

(BRAND OF NAPHAZOLINE HYDROCHLORIDE)

potent, prompt-acting
Privine is a virtually
nonirritating
nasal vasoconstrictor
which can be administered
to children as well
as adults.

2/ 18858M

Ciba Summit, N.J.

Continued from page 94

Dr. James W. Headstream and Dr. Frank G. Kumpuris, both of Little Rock, received Fellowship in the American College of Surgeons at the recent New York meeting.

Dr. F. Q. Wyatt, Batesville, has been elected a Fellow of the International College of Surgeons.

Dr. A. M. Washburn, Little Rock, was recently presented a certificate of appreciation for twenty-five years of service to the Arkansas State Board of Health.

DISTRICT OF COLUMBIA

Dr. William R. Stovall, Washington, Chief of the Medical Division of the Civil Aeronautics Administration, as president presided over the meeting of the Aero Medical Association held in Paris, France, in the early fall.

Dr. Raymond Feldman, formerly of Denver, Colorado, has been appointed chief of the outpatient section, Psychiatry and Neurology Division at the Central Office of the Veterans Administration, Washington. He succeeds Dr. John D. Schultz, Jr., who recently resigned to become director of the phychiatric outpatient program at Georgetown University School of Medicine, Washington.

Washington Medical and Surgical Society has elected Dr. George W. Reeves, president; Dr. John M. Otem, vice-president; and Dr. Emil J. C. Hildenbrand, secretary. Dr. Frank E. Gibson, Sr., Bethesda, Maryland, is permanent treasurer.

The Georgetown University Alumni Club recently presented certificates to Drs. Thomas F. Keliher, professor of internal medicine, Georgetown University School of Medicine, Washington, and Dr. Leo I. Donovan, Bethesda, Maryland, the most immediate past president of the alumni club, for "distinguished services rendered by the sons of Georgetown to our country, our city and our Alma Mater." Dr. Donovan was an instructor at the Georgetown University School of Medicine before entering general practice.

United States Civil Service Commission has announced a Medical Officer examination for filling the positions of Rotating Intern, Psychiatric Resident, and General Practice Resident in St. Elizabeths Hospital, Washington, a large Federal institution for the treatment of mental disorders. Appointments are open for July 1, 1953. Full information and application forms are available at most first- and second-class post offices and at the U. S. Civil Service Commission, Washington 25. Applications will be accepted until further notice by the Executive Secretary, Board of U. S. Civil Service Examiners, St. Elizabeths Hospital, Washington 25.

FLORIDA

Dr. Edward W. Cullipher, Miami, was elected President-Elect of the Dade County Medical Association without opposition at the annual meeting early in December. Dr. Cullipher was General Chairman for the Southern Medical Association meeting in Miami in early November.

Dr. Ralph W. Jack, Miami, was installed as President of the Dade County Medical Association at the annual meeting early in December.

Dr. George F. Schmitt, Miami, was recently appointed Chief of Medicine at the new Mercy Hospital in Miami.

The Dade County Cancer Institute is the recipient of a grant of $10,854 from the National Cancer Institute for the study of cytochemical investigations of exfoliated cells under the direction of Dr. B. C. Hopman and Dr. J. Ernest Ayre, Miami.

Dr. Joshua M. Price, Live Oak, recently received an honor award citation and plaque from the Woodmen of the World.

Dr. Harry K. Morrison, Leesburg, was recently presented a television set and memory book containing signatures of over 1,500 of the children he delivered. He has given forty-four years of service to his community.

Dr. Henry B. Cordes, Frostproof, has received a $1,000 defense bond from friends in appreciation of his thirty-two years of service to the community.

Dr. H. Phillip Hampton, Tampa, has been appointed chairman of the committee on legislation and public policy of the Florida Medical Association. Dr. James V. Freeman, Jacksonville, is chairman of the committee on emergency medical service.

Dr. John M. Schultz, Miami, after an extended leave of absence taking special work in New York in different forms of therapy for gynecological center, etc., will limit his practice to sterility and gynecology.

Continued on page 38

THE NEW YORK POLYCLINIC

MEDICAL SCHOOL AND HOSPITAL

(Organized 1881)

(The Pioneer Post-Graduate Medical Institution in America)

DERMATOLOGY and SYPHILOLOGY

A three year course fulfilling all the requirements of the American Board of Dermatology and Syphilology. Also five-day seminars for specialists, for general practitioners, and in dermatopathology.

PHYSICAL MEDICINE and REHABILITATION

Didactic lectures and active clinical application of all present-day methods of physical medicine in internal medicine, general and traumatic surgery, gynecology, urology, dermatology, neurology and pediatrics. Special demonstrations in minor electrosurgery and electrodiagnosis. The diagnostic tests used in Physical Medicine. Technics in rehabilitation of the seriously disabled.

PROCTOLOGY and GASTROENTEROLOGY

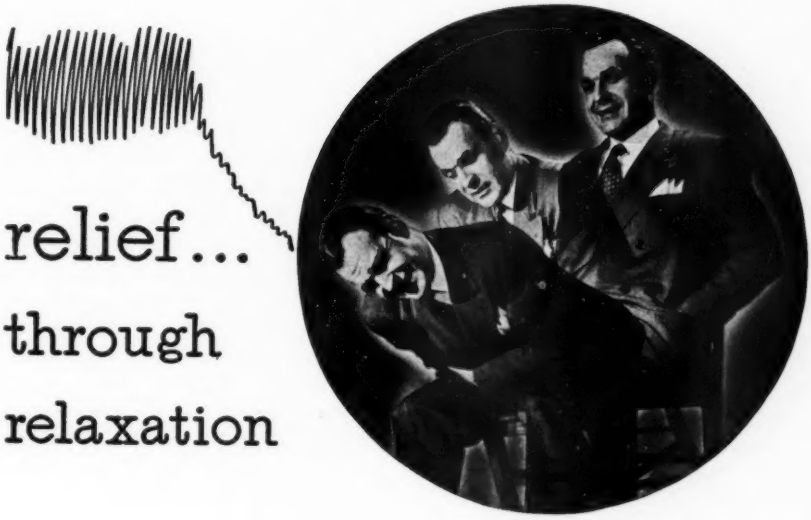
A combined course comprising attendance at clinics and lectures; instruction in examination, diagnosis and treatment; witnessing operations; ward rounds; demonstration of cases; pathology, radiology; anatomy; operative proctology on the cadaver; attendance at departmental and general conferences.

ANESTHESIA

A three months full-time course covering general and regional anesthesia, with special demonstrations in the clinics and on the cadaver of caudal, spinal, field blocks, etc.; instruction in intravenous anesthesia, oxygen therapy, resuscitation, aspiration bronchoscopy; attendance at departmental and general conferences.

For Information about these and other courses Address

THE DEAN, 345 WEST 50th Street, NEW YORK 19, N. Y.



relief...
through
relaxation

"The most important obvious contribution of Trocinate in these ulcer patients was the relief of pain, which persisted without Trocinate, and which was only relieved when an effective dosage of Trocinate was administered."*

TROCINATE® - PHENOBARBITAL

POTENT SYNTHETIC ANTISPASMODIC COMBINED WITH A MILD SEDATIVE

- Atropine-like in its neurotropic action
- Papaverine-like in its musculotropic action
- Non-narcotic, non-toxic, virtually free of side-effects

INDICATED for the relief of smooth muscle spasm in the gastrointestinal and biliary tracts.

In a wide variety of gastrointestinal complaints, including peptic ulcer, pylorospasm, spastic colitis, biliary dyskinesia, Trocinate has been reported to be a highly effective antispasmodic, free of side-effects.

SUPPLIED as red tablets containing 65 mg. Trocinate and 15 mg. phenobarbital, and as pink tablets containing 100 mg. Trocinate; in bottles of 40 and 250 tablets.

DOSAGE 2 tablets, three or four times a day for first week; then reduce to 1 tablet, three or four times a day.

*Crawley, G. A.: *Clinical Study of Trocinate, A New Antispasmodic Drug, M. Rec. & Ann. 43:1104, 1949.*

POYTHRESS

Write for samples, reprints and literature.

WM. P. POYTHRESS & CO., INC., RICHMOND, VA.

®Reg. Trademark of β-diethylaminoethyldiphenylthioacetate.

1st Lieutenant Lloyd L. Burke U.S. Army Medal of Honor

THE RED KOREAN strongpoint had stalled our attack; Lieutenant Burke saw that a breakthrough must be made. Rallying 35 men, he crept close to the enemy bunkers. He laid down a grenade barrage. Then he ran forward to an exposed knoll and opened a one-man pitched battle. He turned a light machine gun into the Red position. He caught live enemy grenades in mid-air and threw them back. Once he killed three men with his pistol. Before sunset Lieutenant Burke and 35 men had defeated 300. The lieutenant says:

"Every day, men who fought in Korea are coming home. They're finding jobs—partly because they and you and I own nearly 50 billion dollars' worth of U.S. Defense Bonds. For Bond savings—which protect our families financially—are also building a great backlog of *national* prosperity. Reason enough for investing in Bonds—don't you agree?"

★ ★ ★

Now E Bonds earn more! 1) All Series E Bonds bought after May 1, 1952 average 3% interest, compounded semiannually! Interest now starts after 6 months and is higher in the early years. 2) *All maturing E Bonds* automatically go on earning *after maturity*—and at the new higher interest! Today, start investing in better-paying Series E Bonds through the Payroll Savings Plan where you work! Or inquire at any Federal Reserve Bank or Branch about the Treasury's brand-new Bonds, Series H, J, and K.

Peace is for the strong! For peace and prosperity save with U.S. Defense Bonds!

The U.S. Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers of America.

oral penicillin t.i.d.

. . . for the more common bacterial infectious diseases

Just 1 or 2 Pentids Tablets t.i.d. are particularly effective . . . convenient, easy-to-take . . . cause fewer side effects . . . and are less than ½ the cost of the newer antibiotics.

Bottles of 12 and 100.

formulated for convenient t.i.d. dosage **Pentids**

Squibb 200,000 Unit Penicillin Tablets

"PENTIDS" IS A TRADEMARK OF E. R. SQUIBB & SONS

SQUIBB

Continued from page 34

Dr. J. M. Ingram, Jr., Tampa, succeeds Dr. C. Frank Chunn, Tampa, as chairman of the executive committee of the Hillsborough County Unit of the American Cancer Society. Dr. Chunn has resigned after serving as chairman since the organization of the society three years ago.

Dr. Valpeau H. Ragsdale, Pierce, was recently honored for long and faithful service by the communities within a fifteen-mile radius of Pierce when friends had a program, speech-making and entertainment.

GEORGIA

Georgia Heart Association at its fourth annual meeting held in Savannah installed Dr. Thomas L. Ross, Macon, president; and elected Dr. Joseph C. Massee, Atlanta, president-elect; Dr. Clarence C. Butler, Columbus, vice-president; and Dr. Herbert D. Tyler, Thomaston, secretary. The 1953 meeting will be held at Savannah next September.

The Woodruff Memorial Building, a $2,000,000 center for medical research in the Southeast, was opened in November at Emory University, Atlanta. It is a seven-story structure connected by closed walkways with Emory University Hospital and was made possible by grants from private donors and from the National Cancer Institute.

Grady Memorial Hospital, Atlanta, recently dedicated the Hughes Spalding Pavilion, a five-floor $1,875,000 structure which houses a complete hospital unit and is operated on a private basis for Negroes ineligible for Grady charity wards. Emory University professors, who are chiefs of service at Grady, will direct the staff of physicians, but long-range plans call for training Negro physicians to take over these top jobs.

Dr. Leonard T. Maholick, Savannah, has resigned as director of the Savannah Mental Health Clinic to enter private practice in Columbus.

Dr. James B. Craig, Savannah, has been appointed associate professor of psychiatry at the Ohio State University College of Medicine, Columbus, and assistant medical director of Columbus Receiving Hospital.

Dr. Oscar L. Rogers, Sandersville, was named Washington County's most outstanding citizen of 1952, the honor being bestowed on him by the Washington County Farm Bureau at a festival held in Tennille.

Georgia Radiological Society has elected Dr. George M. Hutto, Columbus, president; Dr. Albert A. Rayle, Jr., Atlanta, vice-president; and Dr. Robert M. Tankersley, Atlanta, secretary-treasurer.

Plans have been approved for a six-story office building for doctors and dentists in Augusta which will cost a minimum of $1,250,000 and will be near the University Hospital at the Medical College of Georgia.

A building on the campus of the Medical College of Georgia, Augusta, has been named the "Eugene E. Murphey Building" in memory of the late Dr. Eugene E. Murphey in tribute to his services to the community.

Emory University School of Medicine, Atlanta, announces the following promotions: Dr. Charles H. Huguley, Jr., from associate to assistant professor of medicine; Dr. Louis P. Britt from assistant to associate in physical medicine; Dr. Brinton B. Gay from instructor to associate in radiology; Dr. John H. Ridley from instructor to associate in obstetrics; and Dr. Richard H. Smoot from instructor to lecturer in anatomy.

Dr. James R. Whitley, formerly of Winder, has opened offices in Dalton for general medical practice and surgery.

Dr. Perry P. Volpitto, Augusta, was chairman of the general scientific sessions at the meeting of the American Society for Anesthesiologists held in Philadelphia recently.

Dr. C. V. Vansant and Dr. C. V. Vansant, Jr., have moved into completely remodeled new offices in Douglasville.

Dr. Calvin S. Meeks has reopened his office for the practice of medicine after serving with the armed forces two years.

Dr. James J. McDonald has opened offices in Athens for the practice of general surgery.

Dr. Henry C. Frech has resumed his practice of obstetrics and gynecology in Savannah, after returning from duty with the U. S. Army Air Force.

Dr. William W. Osborn has resumed his practice of obstetrics and gynecology in Savannah after returning from duty with the U. S. Army Air Force.

Dr. John Davis Elder, Winder, has completed four years of study in Detroit and opened new offices in Athens with practice limited to obstetrics and gynecology.

Continued on page 46

COMPLETE PROTECTION

Referring to the multiple deficiency nature of pellagra Elvehjem* has pointed out that:

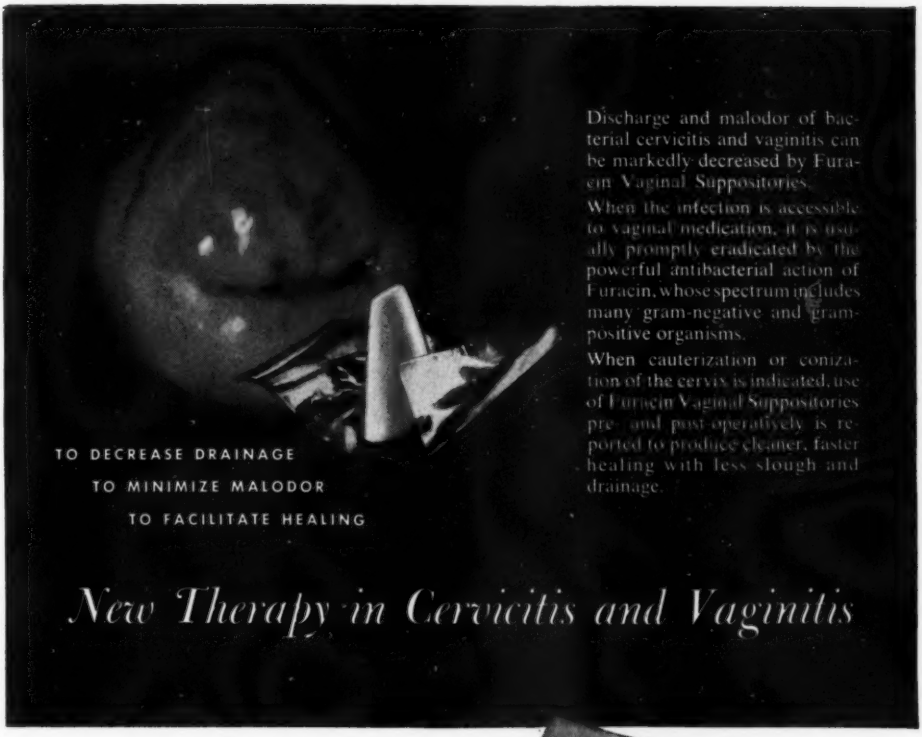
"Nicotinic acid will cure or prevent all conditions produced by a true nicotinic acid deficiency but can be of no value in the treatment of conditions produced by a deficiency of other factors and its value in the treatment of pellagrins is much more effective when all other factors are supplied in optimal amounts."

VITA-FOOD Genuine Brewers' Yeast supplies exceptional amounts of the entire B vitamins together with mutually aiding amino acids.

*Physiol. Rev. 20,249 (1940)

VITA FOOD | Powder, Flakes, Tablets

VITAMIN FOOD CO., INC.
NEWARK 4, N. J.



Discharge and malodor of bacterial cervicitis and vaginitis can be markedly decreased by Furacin Vaginal Suppositories.

When the infection is accessible to vaginal medication, it is usually promptly eradicated by the powerful antibacterial action of Furacin, whose spectrum includes many gram-negative and gram-positive organisms.

When cauterization or conization of the cervix is indicated, use of Furacin Vaginal Suppositories pre- and post-operatively is reported to produce cleaner, faster healing with less slough and drainage.

New Therapy in Cervicitis and Vaginitis

FURACIN®

VAGINAL SUPPOSITORIES

contain Furacin 0.2%, brand of nitrofurazone N. N. R. in a base which is self-emulsifying in vaginal fluids and which clings tenaciously to the mucosa. Each suppository is hermetically sealed in foil which is leakproof even in hot weather. They are stable and simple to use.

These suppositories are indicated for bacterial cervicitis and vaginitis, pre- and post-operatively in cervical and vaginal surgery.

Literature on request

EATON LABORATORIES Inc.
NORWICH, NEW YORK

new,
improved

ARLCAPS

for faster, greater,
more sustained relief
in the **COMMON COLD**
and **ASTHMA**

- reduces edema and congestion in the bronchi and upper respiratory mucosa – relaxes spastic bronchial musculature.
- alleviates malaise and fever – allays tension and apprehension concomitant to asthma.
- easier breathing within minutes – relief lasting for hours.

new, improved **ARLCAPS**
each capsule provides:

Ephedrine Hydrochloride	26 mg. (2/5 gr.)
Ascorbic Acid	100 mg.
Aspirin	130 mg. (2 gr.)
Phenobarbital (may be habit forming)	26 mg. (2/5 gr.)

now contains ascorbic acid

Professional samples available from:

The **ARLINGTON CHEMICAL COMPANY**
division of U. S. Vitamin Corporation
Yonkers 1, N. Y.

Concerning

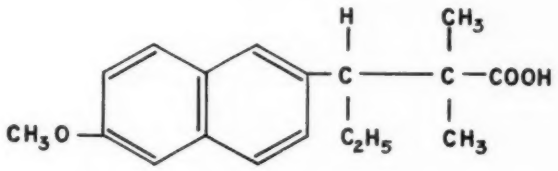
VALLESTRIL*...

(BRAND OF METHALLENESTRIL)

A NEW PRODUCT

Clinical evidence indicates that much estrogen therapy is accompanied by a high incidence of unfortunate side actions such as withdrawal bleeding, nausea and edema.

G. D. Searle & Co. presents VALLESTRIL.....



as an effective estrogenic substance with a *strikingly low incidence* of these undesirable side effects.

VALLESTRIL is only available in 3 mg. scored tablets. For treatment of the physiologic or artificial menopause—3 mg. (one tablet) twice daily for two weeks. Then a maintenance dose of one tablet daily for an additional month or longer if symptoms require continued administration.

*Trademark of G. D. Searle & Co.

SEARLE RESEARCH IN THE SERVICE OF MEDICINE

Same hard candy form as Pondets

Easy to take—pleasant tasting

Now . . . . .

Sul-Pondets, presenting the combined therapeutic advantages of two potent antibiotics, an efficient sulfonamide and a highly active topical anesthetic. Highly effective in certain local infections of the oropharynx.

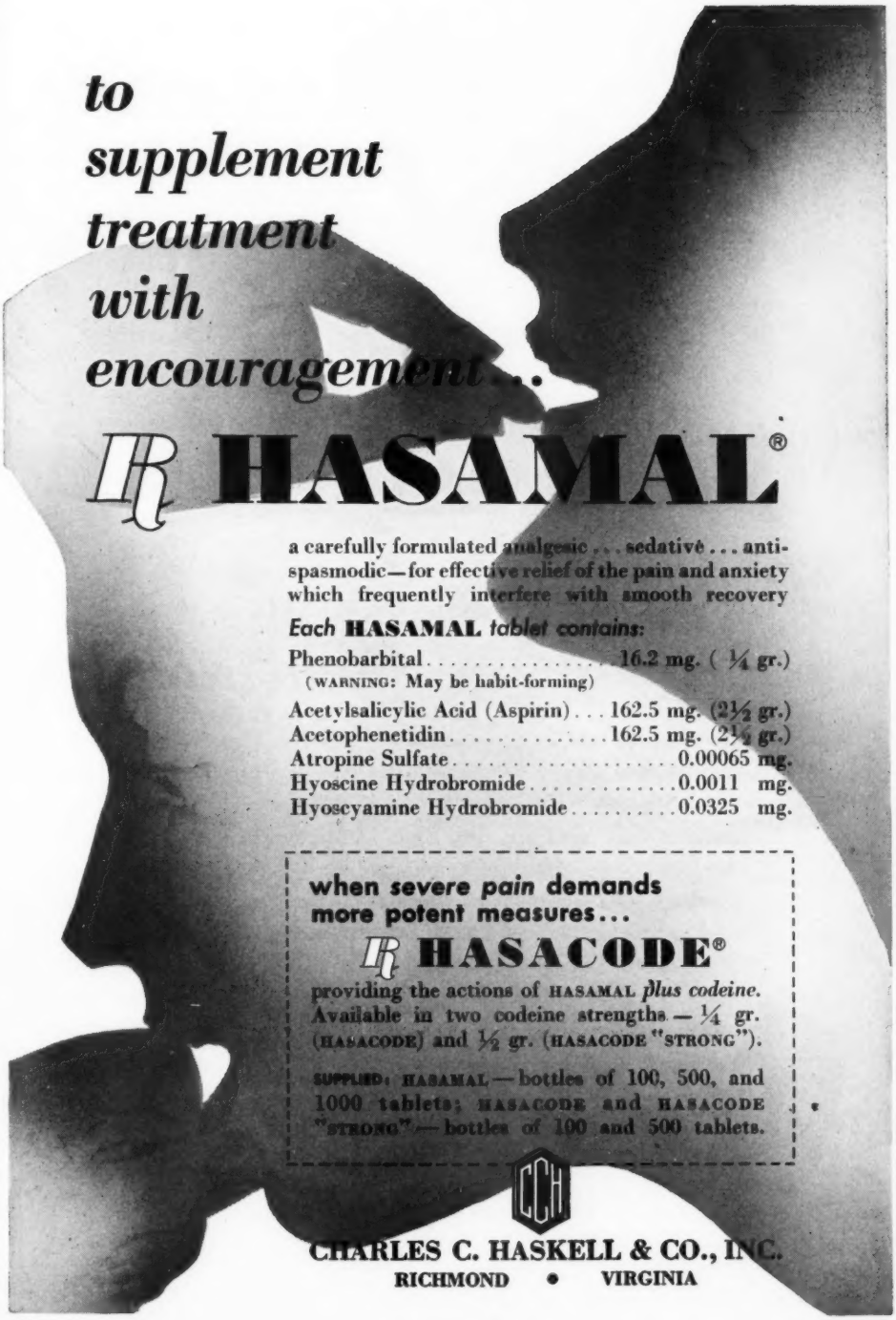
Sul-Pondets®

PENICILLIN—BACITRACIN—SULFADIAZINE
Troches with Benzocaine

Each SUL-PONDET contains 20,000 units crystalline potassium penicillin G, 50 units bacitracin, 2 gr. sulfadiazine, and 3 mg. benzocaine. Jars of 36.

Also available: PONDETS—Penicillin (20,000 units) and Bacitracin (50 units). Vacuum-packed in tins of 48.

Wyeth®



to supplement treatment with encouragement...

℞ **HASAMAL®**

a carefully formulated analgesic . . . sedative . . . antispasmodic—for effective relief of the pain and anxiety which frequently interfere with smooth recovery

Each **HASAMAL** *tablet contains:*

Phenobarbital	16.2 mg. (¼ gr.)
(WARNING: May be habit-forming)	
Acetylsalicylic Acid (Aspirin)	162.5 mg. (2½ gr.)
Acetophenetidin	162.5 mg. (2½ gr.)
Atropine Sulfate	0.00065 mg.
Hyoscine Hydrobromide	0.0011 mg.
Hyoscyamine Hydrobromide	0.0325 mg.

when severe *pain* demands more potent measures...

℞ **HASACODE®**

providing the actions of HASAMAL *plus codeine.* Available in two codeine strengths — ¼ gr. (HASACODE) and ½ gr. (HASACODE "STRONG").

SUPPLIED: HASAMAL — bottles of 100, 500, and 1000 tablets; HASACODE and HASACODE "STRONG" — bottles of 100 and 500 tablets.

CCH

CHARLES C. HASKELL & CO., INC.

RICHMOND • VIRGINIA

Make breakfast count *nutritionally*

Breakfast, termed by many authorities the most important meal of the day, especially for children, can be made a really nutritious meal when Ovaltine in hot milk is the morning beverage. Children enjoy the warming comfort of this hot drink at breakfast and can obtain real benefits from its wealth of nutritional essentials. Delicious hot Ovaltine gives children a nutritional head start for the day, providing a good share of the nutrients they require to be at their best at school and at play. Note the generous contribution of essential nutrients made by a cupful of Ovaltine in hot milk. Ovaltine is available in two forms, plain and sweet chocolate flavored. The latter is the favorite of most children.

THE WANDER COMPANY, 360 NORTH MICHIGAN AVE., CHICAGO 1, ILLINOIS

Ovaltine

Here are the nutrients that a cupful of hot Ovaltine, made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk,* provides:

PROTEIN	10.5 Gm.	IRON	4 mg.	NIACIN	2.3 mg.
FAT	10.5 Gm.	COPPER	0.2 mg.	VITAMIN B_{12}	0.0017 mg.
CARBOHYDRATE	22 Gm.	VITAMIN A	1000 I.U.	VITAMIN C	10 mg.
CALCIUM	370 mg.	VITAMIN B_1	0.39 mg.	VITAMIN D	140 I.U.
PHOSPHORUS	315 mg.	RIBOFLAVIN	0.7 mg.	CALORIES	225

*Based on average reported values for milk.

Introducing a new Valentine product...

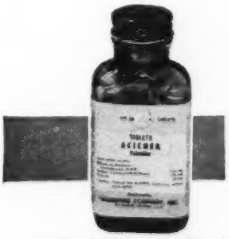
for more effective control of gastric hyperacidity.

Particularly indicated in peptic ulcer, "heartburn" of pregnancy, gastric hypermotility, chronic dyspepsia and other functional indigestions.

acichek

VALENTINE

A combination of dihydroxy aluminum aminoacetate, N.N.R., sodium carboxymethylcellulose and glycine.



Supplied in bottles of 100 and 1000 tablets.

- acts almost immediately to give prompt relief from gastric distress
- maintains a desirable pH of gastric contents for hours with no depression of peptic activity
- produces neither secondary acid rise nor systemic alkalosis
- provides a mild, physiologic corrective of constipation
- easily and acceptably administered in tablets which require no chewing

VALENTINE COMPANY, INC.
Richmond 9, Virginia

a "lift"

for failing and

convalescent hearts

PASANOL

(TILDEN)

well balanced cardiac

and vasomotor stimulant

PASANOL (Tilden) provides prompt dependable cardiotonic and vasomotor stimulation to help bring more comfort and perhaps longer life to grateful cardiac patients. **PASANOL** is liquid, convenient, dosage easily adjusted. Indicated in . . . **myocardial insufficiency, heart failure, heart musculature weakness following severe or chronic illness, etc.**

	per fluid ounce	per 100 cc.
Digitoxin	1/350 gr.	0.6 mg.
Strophanthin	1/25 gr.	8.5 mg.
Strychnine Sulfate	1/25 gr.	8.5 mg.
Nitroglycerin	2/25 gr.	17.00 mg.
Cactus grandiflorus	1/2 gr.	0.11 mg.

SAMPLES and literature on request

our new Address:

The TILDEN Company

435 Chestnut Street

CHATTANOOGA 2, TENN.

Home Office: New Lebanon, N. Y.

The Oldest Manufacturing Pharmaceutical House in America • Founded 1824

Continued from page 38

Georgia Orthopedic Society has elected Dr. F. B. Brown, Savannah, president; Dr. T. P. Waring, Savannah, vice-president; and Dr. C. G. Henry, Augusta, secretary-treasurer. Dr. Peter B. Wright, Savannah, and Dr. Paul Rieth, Atlanta, will serve on the executive committee.

Dr. James L. Campbell, formerly of Valdosta, is associated with Dr. Louis Orr, Orlando, Florida.

Dr. Thomas H. Brabson, Cornelia, was recently honored for his many years of service at a district Woodman of the World meeting.

Dr. James L. Bush, Dublin, has taken over the offices and practice of Dr. J. A. Oliver, Douglas. Dr. Oliver has retired and moved to Clearwater, Florida.

KENTUCKY

At the annual meeting of the Kentucky State Medical Association in Louisville in October, Dr. H. Haynes Barr, Owensboro, was installed President. Dr. J. Duffy Hancock, Louisville, was elected President-Elect, and Dr. Charles B. Johnson, Russell, Dr. William O. Johnson, Louisville and Dr. Guthrie Y. Graves, Bowling Green, were elected Vice-Presidents.

Telephone Seminars will be held January 27, February 24, March 24 and April 28 as announced by Dr. Robert Lich, Louisville, chairman of the Kentucky State Medical Association Committee on Medical Education.

Dr. William F. Lamb, a native of Franklin, is Deputy Commissioner of Health in Charge of General Health Services of the State Department of Health. He was formerly director of health of the Louisville-Jefferson County Board of Health.

Dr. Hart H. Hagan announces his association with his son, William H. Hagan in practice limited to general surgery. Dr. William H. has just completed two years training at the University of Pennsylvania Hospital.

Dr. Charles D. Yohe, formerly a member of the staff of Central State Hospital, Lakeland, Florida, has been appointed clinical director of Kentucky State Hospital.

LOUISIANA

A $2,429,000 ten-story addition to Hutchinson Memorial Medical Building, New Orleans, is being constructed, $500,000 of the cost being a grant by the National Heart Institute. This building is a part of Tulane University School of Medicine, across from Charity Hospital.

Dr. Arthur A. Calix, New Orleans, has been elected vice-president of the Southern Trudeau Society, a clinical branch of the National Tuberculosis Association.

A clinic for speech and hearing defects has been established in Tulane University School of Medicine's department of otolaryngology with Dr. James McLaurin, professor of otolaryngology as director. It is located in the Hutchinson Memorial Medical Building.

Dr. Spurgeon M. Wingo, assistant professor of medicine and pharmacology, Louisiana State University School of Medicine, New Orleans, represented the Medical School as a visitor to the Third Empire and Commonwealth Health and Tuberculosis Conference held in London. At that time he visited several tuberculosis hospitals in England, France, Switzerland and Italy.

Dr. T. W. Richards, formerly professor of psychology, Northwestern University School of Medicine, Chicago, has been appointed associate in psychiatry (psychology) at Louisiana State University School of Medicine, and professor of psychology in the department of psychology.

Dr. Dean H. Echols, New Orleans, as president presided over the annual session of the American Association of Medical Clinics held in Denver, Colorado, recently.

MARYLAND

Dr. James A. Shannon has been appointed Associate Director of the National Institutes of Health, Public Health Service, Bethesda. For the past three and a half years he has served as Associate Director of the National Heart Institute a major research unit within the National Institutes of Health.

Dr. Sara E. Branham, senior bacteriologist at National Institutes of Health, Bethesda, recently received the Distinguished Service Citation of the University of Chicago's Medical Alumni Association.

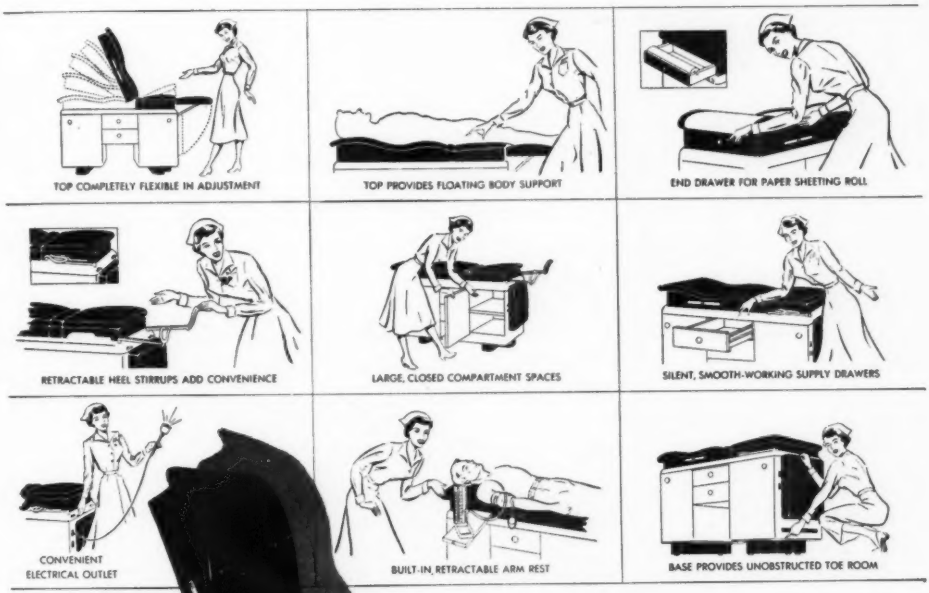
Dr. Robert J. Furie has been appointed full-time pathologist of the Frederick Memorial Hospital, Frederick.

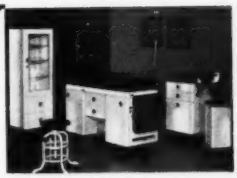
Continued on page 50

new Steeline

. . . offers new, exclusive functional conveniences, advanced styling, long-term economy

Foam-rubber-cushioned, body-contour top; retractable heel stirrups; magnetic door latches; large, chrome-plated drawer- and door-pulls; recessed bases; concealed paper sheeting holder; new color finishes—these are a few of the recent refinements in design detail that make the New Steeline Treatment Table the finest steel table ever made. Complete information on request.


TOP COMPLETELY FLEXIBLE IN ADJUSTMENT
TOP PROVIDES FLOATING BODY SUPPORT
END DRAWER FOR PAPER SHEETING ROLL
RETRACTABLE HEEL STIRRUPS ADD CONVENIENCE
LARGE, CLOSED COMPARTMENT SPACES
SILENT, SMOOTH-WORKING SUPPLY DRAWERS
CONVENIENT ELECTRICAL OUTLET
BUILT-IN, RETRACTABLE ARM REST
BASE PROVIDES UNOBSTRUCTED TOE ROOM

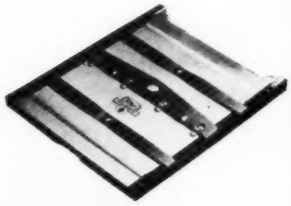


With table as nucleus, other New Steeline pieces form treatment room group complete in all respects.

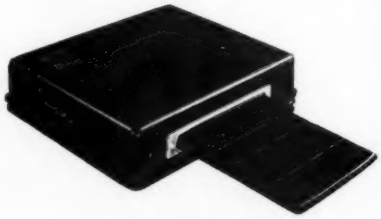
A. S. ALOE COMPANY, *General Offices:* 1831 Olive St., St. Louis 3, Mo.
Branches: Los Angeles, New Orleans, Kansas City, Minneapolis, and Washington, D. C.

PICKER-POLAROID "ONE MINUTE X-RAY" is now available for CIVILIAN use

THE PACKET



THE CASSETTE



THE AUTOMATIC PROCESSOR

You've probably already heard of the "one-minute" Picker-Polaroid radiograph. Introduced a little over a year ago, this dramatic development was immediately accepted by the Armed Services which requisitioned the entire output for military needs. Ever since, we have been struggling to increase production to the point where parallel civilian needs could at least be partly met. That point has now been reached. Limited quantities are becoming available to civilian users.

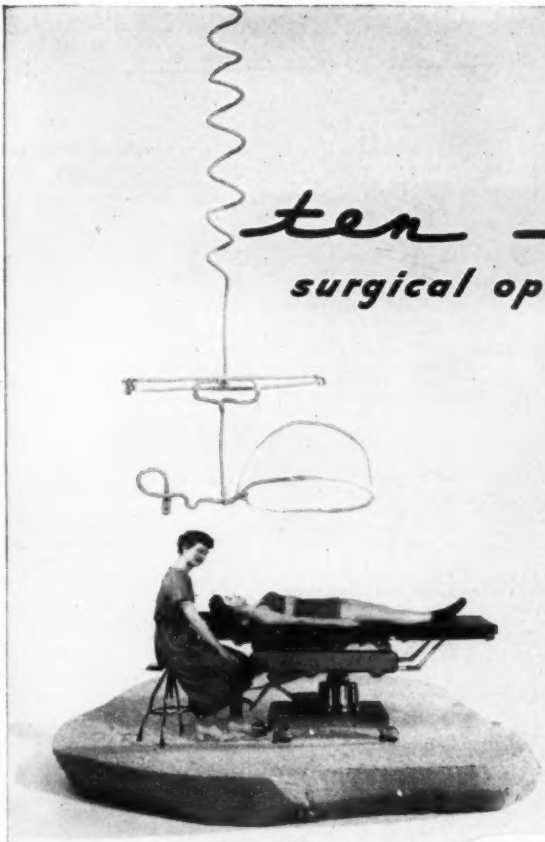
The Picker-Polaroid system is an adaptation to radiography of the self-development principle of the Polaroid Land Camera. The whole job takes only a minute . . . can be done in broad daylight . . . needs no darkroom, no solutions, no dryer. It is all incredibly simple and quick: (a) you load the cassette (b) make the exposure (c) put the cassette in the automatic processing box. Wait sixty seconds: open the box and there's your finished radiograph . . . flat, dry, ready for use. Its speed and convenience have already proven invaluable in the operating room for hip-pinning and similar procedures; for emergency hospital admissions, for work with portable and mobile x-ray units.

Since quantities are still limited, those wishing to obtain Picker-Polaroid equipment supplies would do well to communicate at once with either their local Picker office, or with Picker X-Ray Corporation, 25 South Broadway, White Plains, New York.

Picker x-ray POLAROID®

ten eighty

surgical operating table



☑ New Table!

☑ Important Advance!

table top can NOW be lowered to —

27"

For convenient approach to the operative site— throughout the posturing category.

Write Dept. GD-1 for complete catalog

American Sterilizer Company

ERIE, PENNSYLVANIA

Continued from page 46

Dr. C. J. Van Slyke has been appointed as an Associate Director of the National Institutes of Health, Bethesda. He is succeeded as Director of the National Heart Institute by Dr. James Watt. Dr. Watt for the past several years has been in charge of the field laboratory of the National Microbiological Institute located at Louisiana State University School of Medicine, New Orleans.

Dr. John A. C. Colston, Baltimore, has been elected president-elect of the American Urological Association. The next annual meeting will be held in St. Louis, May 11-14.

Dr. Kenneth Fuller Maxcy, professor of epidemiology, Johns Hopkins University School of Medicine, Baltimore, had bestowed upon him the Sedgwick Memorial Medal by the American Public Health Association at its recent meeting held in Cleveland, Ohio, for his achievements in research and teaching and his contributions to the understanding of typhus.

MISSISSIPPI

Dr. David S. Pankratz, dean and professor of anatomy, University of Mississippi College of Medicine, University, is the recipient of a Distinguished Service Award, received at a ceremony held by the University of Chicago recently. Dr. Pankratz received his degree of doctor of medicine in 1938 from the University of Chicago and was previously awarded the Ph.D. degree.

MISSOURI

Dr. J. William Cox, department of physiology, St. Louis University School of Medicine, St. Louis, has been awarded a post-doctorate research fellowship by the United States Public Health Service Institute for Neurological Diseases and Blindness. The fellowship is for one year beginning in January and the work, under the direction of the department of physiology, will involve continuation of research on problems of the nerve control of blood vessels underlying the skin in relation to diseases of the blood vessels.

The pediatric service of Kansas City General Hospital No. 1 has become affiliated with the department of pediatrics of the University of Kansas School of Medicine, Kansas City, Kansas, as a part of the teaching activity of the school. Dr. Franklin C. Behrle of the pediatric department of the school will have charge of the teaching of medical students and of the hospital's interns and residents, the teaching program being supported by the Kansas City Association of Trusts and Foundations.

NORTH CAROLINA

Dr. Wilburt C. Davison, Dean and Professor of Pediatrics, Duke University School of Medicine, Durham, was recently honored with a testimonial dinner in Chicago by fifty former members of Duke Hospital medical staff now practicing in all parts of the United States for his "significant accomplishments and many services to pediatric education." Dr. Davison was described as "educator, author, humanitarian and complete pediatrician" and it was pointed out that his book, "'The Complete Pediatrician,' is indispensable to all who practice pediatrics."

North Carolina Surgical Association has elected Dr. L. Gordon Sinclair, Raleigh, president; Dr. F. M. Simmons Patterson, New Bern, vice-president; and Dr. Alexander Webb, Jr., Raleigh, secretary-treasurer.

North Carolina Urological Association has elected Dr. Edwin P. Alyea, Durham, president; Dr. John Rhodes, Raleigh, vice-president; and Dr. Louis C. Roberts, Durham, secretary-treasurer.

Dr. Lockert B. Mason has opened offices in Wilmington for the practice of general and thoracic surgery.

The North Carolina Memorial Hospital, the teaching hospital of the University of North Carolina four-year medical school, opened its doors for the admission of patients in the fall.

The Nalle Clinic, Charlotte, has added to its staff, Dr. Walter C. Hilderman in the department of general surgery.

Dr. Howard P. Steiger, Charlotte, announces the association of Dr. Porter F. Crawford, practice limited to dermatology and syphilology.

Dr. Guy L. Odom, neurosurgeon at Duke University School of Medicine, Durham, was guest lecturer at the Montreal

Continued on page 56

Octin - *spasmolytic and sympathomimetic*

1... relaxation of smooth muscle spasm especially of the genito-urinary and gastro-intestinal tracts . . . . . 2... in migraine and related headaches.

DOSE: Oral, 1 or 2 Octin tablets, 1 additional tablet in three to four hours.

Intramuscular injection, ½ to 1 cc. Give test dose to determine absence of sensitivity and excessive hypertensive reaction.

Octin ® brand of Isomethepteno, methylisooctenylamine.

Bilhuber-Knoll Corp. Orange, N. J.

Made from the *leaf*—

Always
WAS, IS and
WILL BE
Dependable
in digitalization
and its maintenance

The physician
can always
rely on

Pil. Digitalis (Davies, Rose)
0.1 Gram (approx. 1½ grains)

These certain qualities can be positively identified

Comprise the entire properties of the leaf of Digitalis

Physiologically Standardized

Each Pill is equivalent to one U. S. P. Digitalis Unit

Clinical samples and literature sent to physicians on request

Davies, Rose & Company, Limited Boston 18, Mass.

PHARMACEUTICAL MANUFACTURERS

D23

1. immediate 2. sustained 3. prolonged reduction in blood pressure

Capsules RAY-TROTE combine three supplementing therapeutic agents which serve to control high blood pressure with maximum efficiency. Capsules RAY-TROTE introduce a timing element essential for the safest and most satisfactory control of hypertension.

NITROGLYCERIN: Because of its rapid vasodilating action, nitroglycerin reduces blood pressure almost instantaneously. To give the patient immediate relief, it still remains the drug of choice.

SODIUM NITRITE: Sodium nitrite is a somewhat slower acting vasodilator, and begins to take full effect as the action of nitroglycerin subsides.

VERATRUM VIRIDE: Veratrum viride is probably the most active and reliable cardiac depressant. Although slow to act, its depressant effect on blood pressure is prolonged, exceeding that of sodium nitrite by several hours.

Consequently, capsules RAY-TROTE provide, in a single dosage form, immediate, sustained and prolonged therapeutic activity.

Note: *Raymer veratrum viride is both chemically and physiologically standardized (see kymograph tracings) to insure uniform action.*

PHENOBARBITAL: Capsules RAY-TROTE also contain phenobarbital, to maintain a calmer, more restful hypertensive patient.

DOSAGE: One capsule every three or four hours. Discontinue use if pulse becomes abnormally slow, or patient complains of nausea.

3-stage action
to control hypertension

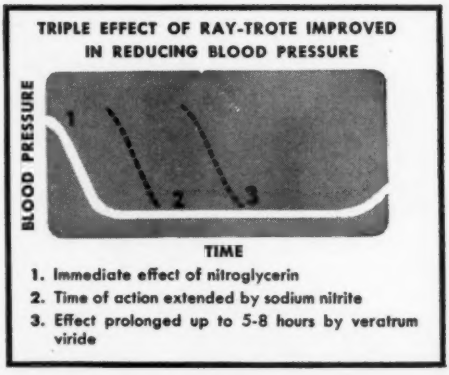
RAY-TROTE

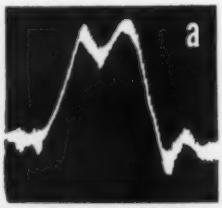
Capsules Improved

Formula: Each capsule contains:

Nitroglycerin	0.25 mg.
Sodium Nitrite	30 mg.
Veratrum viride (standardized to 1.0% alkaloid content)	65 mg.
Phenobarbital	15 mg.

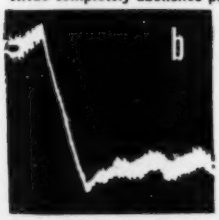
Supplied in bottles of 100, 500 and 1,000 capsules. Also available, Capsules RAY-TROTE *with Rutin. In addition to the* RAY-TROTE *formula, each capsule contains* Rutin, *20 mg.*

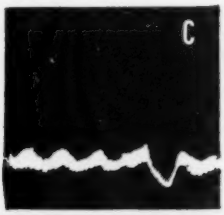

TRIPLE EFFECT OF RAY-TROTE IMPROVED IN REDUCING BLOOD PRESSURE
BLOOD PRESSURE
1
2
3
TIME
1. Immediate effect of nitroglycerin
2. Time of action extended by sodium nitrite
3. Effect prolonged up to 5-8 hours by veratrum viride



a. Pressor response to carotid sinus reflex (in dog) during control period.

b. Injection of Raymer standardized veratrum viride effects marked (57%), and almost instantaneous, fall in blood pressure.
c. Raymer standardized veratrum viride completely abolishes pressor response to carotid sinus reflex —providing a conclusive physiological measure of therapeutic hypotensive activity and uniform potency of the drug.





RAYMER

RAYMER PHARMACAL COMPANY
Pharmaceutical Manufacturers
Jasper and Willard Streets, Philadelphia 34, Pa.

Serving the Medical Profession for Nearly a Third of a Century

CAFERGOT®

minutes are of the essence in migraine therapy . . .

Pharmacotherapy, psychotherapy, physiotherapy and surgery, may be employed individually or in combination for therapy of head pain. De Jong's concept of pharmacotherapy in migraine may well be employed to treat most cephalalgias; first—treat or shorten the individual attack and second—prevent the recurrence or lengthen the intervals between attacks.

The first principle in treating the headache is to start immediately when the first sign of trouble appears. The earlier treatment is started, the more successful it is likely to be.

De Jong, R. N.: Chicago M. Soc. Bull. *54*:106 (Aug.) 1951.

For.....Date.....

1. Take 2 tablets at first sign of attack.
2. If the attack continues take one additional tablet every half-hour until attack is terminated.
3. Do not take more than 6 tablets for any single attack or more than 10 tablets in any one week.
4. If attack develops more rapidly or is more severe than usual, take 3 or 4 tablets as early as possible.
5. If you notice any change in your symptoms, report to your physician immediately.

.....M.D.

.....

Do not take tablets between attacks.

Supplies of the pad (left) "Directions To Your Patient" are available on request to:

SANDOZ *pharmaceuticals*
division of Sandoz Chemical Works, Inc.
New York 14, N. Y.

Saint Albans Sanatorium

RADFORD, VIRGINIA

100 bed private psychiatric hospital for the treatment of nervous and mental disorders, including alcoholism and addiction.

James P. King, M.D.
Director

James K. Morrow, M.D. Thomas E. Painter, M.D. Daniel D. Chiles, M.D.

James L. Chitwood, M.D.
Medical Consultant

Browne-McHardy Clinic

- Diagnostic and Therapeutic Facilities
- Internal Medicine and Gastroenterology
- Surgery
- Gynecology and Obstetrics
- Radiology—X-ray and Radium therapy
- Laboratory and Research Departments
- Hotel facilities available

3636 ST. CHARLES AVENUE

Phone UPtown 9580 • *New Orleans, La.*

ANNOUNCING

The Sixteenth Annual Meeting of THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Conference Headquarters — Municipal Auditorium

MARCH 2 - 5, 1953

GUEST SPEAKERS

J. LAMAR CALLAWAY, M.D., Durham, N. C. *Dermatology*

A. H. AARON, M.D., Buffalo, N. Y. *Gastroenterology*

HERBERT E. SCHMITZ, M.D. Chicago, Ill. *Gynecology*

CARL V. MOORE, M.D., St. Louis, Mo. *Hematology*

RUDOLPH H. KAMPMEIER, M.D., Nashville, Tenn. *Internal Medicine*

HENRY A. SCHROEDER, M.D., St. Louis, Mo. *Internal Medicine*

GUY L. ODOM, M.D., Durham, N. C. *Neurosurgery*

ANDREW A. MARCHETTI, M.D., Washington, D. C. *Obstetrics*

HAROLD F. FALLS, M.D., Ann Arbor, Mich. *Ophthalmology*

J. VERNON LUCK, M.D., Los Angeles, Calif. *Orthopedic Surgery*

G. EDWARD TREMBLE, M.D., Montreal, Can. *Otolaryngology*

ARTHUR P. STOUT, M.D. New York, N. Y. *Pathology*

WALDO E. NELSON, M.D. Philadelphia, Pa. *Pediatrics*

EDWARD B. D. NEUHAUSER, M.D., Boston, Mass. *Radiology*

GEORGE CRILE, JR., M.D., Cleveland, Ohio *Surgery*

ROBERT E. GROSS, M.D., Boston, Mass. *Surgery*

CHARLES W. MAYO, M.D. Rochester, Minn. *Surgery*

WYLAND F. LEADBETTER, M.D., Boston, Mass. *Urology*

Lectures, symposia, clinicopathologic conferences, round-table luncheons, surgical and medical procedures in color television, medical motion pictures and technical exhibits.

(All-inclusive registration fee—$20.00)

THE POSTCLINICAL TOUR TO EUROPE BY SHIP AND PLANE—ENGLAND, FRANCE, SWITZERLAND AND ITALY—MARCH 7-31

For information concerning the Assembly meeting and the tour write Secretary, Room 103, 1430 Tulane Avenue, New Orleans 12, La.

[ORAL FAT EMULSION SCHENLEY]

• **provides extra calories**—150 per ounce, in easily utilized form, for quick gain in weight and strength

• **without excessive bulk**—no undue digestive burden...no reduction in appetite for other foods

• **or cloying taste**—delicious alone or with a variety of nutritious foods

In 16-oz. bottles.

SCHENLEY LABORATORIES, INC.
LAWRENCEBURG, INDIANA

schenley

© Schenley Laboratories, Inc.

Continued from page 50

Neurosurgical Society held in Montreal, Canada, recently. Dr. Odom is vice-president of the Southern Neurosurgical Society.

Dr. Arthur F. Abt, director of the Radioisotope Unit of the new Veterans' Administration Hospital, Durham, has been appointed a professor of pediatrics at Duke University School of Medicine, Durham. Dr. Abt is one of seven chiefs of services who will conduct the medical program of the new 500-bed hospital which is expected to open in Durham about April 1.

OKLAHOMA

Drs. William Mitchener, Okmulgee, Isaac Dalton Walker, Tonkawa, and Divonis Worten, Pawhuska, were recently presented golden "T" certificates at the University of Tennessee College of Medicine, Memphis, in recognition of services rendered in the half century since their graduation.

Dr. C. Alton Brown, Oklahoma City, recently attended the second International Congress of Internal Medicine in London and visited Belgium, Switzerland, Germany and France.

Drs. Jack H. Reynolds, Virgil D. Matthews and Virgil B. Gray are building a new clinic building in Muskogee.

Dr. Rowe F. Bisbee, Ada, has been appointed acting director of the Pontotoc County Health Department.

Dr. Tom Points has opened an office in Oklahoma City after being released from military services.

Dr. Lewis J. Moorman, editor of the *Journal of the Oklahoma State Medical Association*, and Mrs. Moorman, attended the World Medical Association meeting and World Medical Editors Association in Athens, Greece.

Dr. Homer F. Marsh, for eleven years associate dean and professor of bacteriology at the University of Oklahoma School of Medicine, Oklahoma City, is associate dean of the University of Miami Medical School, Miami, Florida.

SOUTH CAROLINA

South Carolina Heart Association will hold its annual meeting in Greenville in February.

Dr. John M. Preston, Columbia, has been elected president of the South Carolina Public Health Association.

Dr. G. P. Joseph, Myrtle Beach, attended the World Medical Association meeting held in Athens, Greece in the fall.

Dr. J. A. Tobin and his wife, Dr. Mary T. Tobin, have opened offices in Denmark for the practice of general medicine.

Dr. Fred H. Fellers and Dr. John E. Holler, Columbia, have been named Fellows of the American College of Surgeons.

Dr. John Homer Mathias, Jr., has opened offices in West Columbia for the practice of general medicine.

Dr. C. L. Mathis, Jr., Georgetown, after serving two years as health officer for Horry and Georgetown Counties, has been transferred to Conway to serve as a full time health officer for Horry County.

Dr. Charles R. Holmes has opened offices in his home town, Columbia, for the practice of internal medicine.

Dr. Charles F. Timmons is associated with his brother, Dr. Thad A. Timmons, Lake City, in the practice of medicine.

Dr. Joel T. Wyman has returned to Anderson after three years of special study in dermatology and has opened offices with practice limited to this specialty.

Dr. P. M. Temples, formerly of Spartanburg, has moved to Columbia and accepted a position with the South Carolina Tuberculosis Hospital at State Park.

Dr. Hasell G. Ross is associated with Dr. Emmett Madden, Columbia, in the practice of internal medicine.

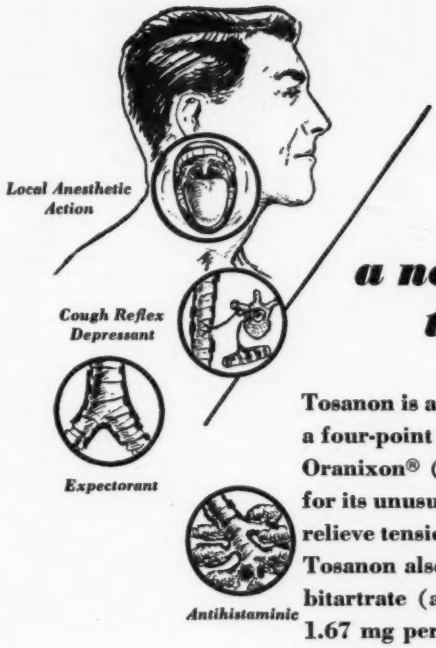
Dr. A. J. Goforth is associated with Dr. J. W. Jervey, Greenville, in the practice of medicine. Dr. Goforth has completed a tour of duty with the army in Japan.

Dr. Robert E. Livingston, Newberry, has located in New York where he will specialize in eye, ear, nose and throat work.

Roper Hospital, Charleston, has elected to its medical-surgical staff Dr. Lawrence Hester, president; Dr. Thomas Herbert, vice-president; and Dr. C. A. Robb, secretary.

Dr. Frederick F. Kredel, head of the department of surgery, Medical College of South Carolina, and chief surgeon at Roper Hospital, Charleston, has been presented the University of Chicago Distinguished Service Award. He is one of twenty-seven University of Chicago medical alumni who have been made full professors in medical schools in the United States. Dr. Kredel was recently elected president of the South Carolina Surgical Society.

Continued on page 58



a new approach to cough control

Tosanon is a unique cough preparation supplying a four-point attack on coughs. Tosanon contains Oranixon® (mephenesin), 75 mg per tsp., for its unusual local anesthetic effect which helps relieve tension and soreness of throat membranes. Tosanon also contains dihydrocodeinone bitartrate (a superior codeine derivative), 1.67 mg per tsp., for cough reflex depressant action; potassium citrate, 400 mg per tsp., for non-irritating, rapid expectorant action; and pyrilamine maleate, 7.5 mg per tsp., for effective antihistaminic action. These are all contained in a palatable vehicle with a special spreading action which assures intimate contact of therapeutic ingredients with irritated surfaces. Tosanon is available in 1-pint bottles.

Organon INC. • ORANGE, N. J.

new

TOSANON

Organon

T.M.—Tosanon

Continued from page 56

TENNESSEE

Dr. Wm. Milton Adams, Memphis, was elected president-elect of the American Society of Plastic and Reconstructive Surgery at the meeting held in New York in October and will assume office in October.

University of Tennessee College of Medicine, Memphis, has been awarded a research grant of $24,000 by the American Cyanamid Company, Lederle Laboratories Division, Pearl River, New York, to finance a study of the health of the aged.

Dr. W. T. Black, Jr., was chairman of local arrangements for the annual meeting of the Central Association of Obstetricians and Gynecologists held in Memphis recently.

The Central State Hospital, Nashville, recently celebrated its one hundredth anniversary as announced by the superintendent, Dr. Oscar S. Hauk.

Memphis Heart Association has awarded a grant of $1,500 to Dr. Robert Brown, Department of Pharmacology, University of Tennessee College of Medicine, Memphis, to study the ability of the female sex hormones to produce hypertension.

Dr. William F. Meacham, Nashville, was elected president of the Neurological Society of America at the meeting held recently at Sea Island, Georgia.

Tennessee physicians elected to fellowship in the American College of Surgeons at its annual meeting held in New York City are: Dr. Rudolph Matas Landry, Dr. Edward G. Johnson and Dr. George Shelton, of Chattanooga; Dr. Henry T. Kirby-Smith of Sewanee, Dr. Thomas P. McKee and Dr. John M. Wilson of Johnson City.

Dr. Harwell Wilson, professor and chief of the Division of Surgery, and Dr. Frank Whitacre, professor and chief of the Division of Obstetrics and Gynecology, University of Tennessee College of Medicine, Memphis, received Distinguished Service Awards at a ceremony held by the University of Chicago recently.

Dr. Louis A. Killeffer and Dr. Stratton Jones, Harriman, have moved into their new thirteen-room office building.

Dr. F. G. Little, Morristown, has purchased the interest of Dr. M. J. Bellaire in the Bellaire Hospital and is now sole owner.

Dr. Murlin Nester, of West Virginia, has opened offices in Lawrenceburg for the practice of medicine and surgery.

Dr. Hilde Fielder, Munich, Germany, has joined the Department of Biochemistry, University of Tennessee College of Medicine, Memphis, as a research associate.

Dr. James G. Hughes, Department of Pediatrics, University of Tennessee College of Medicine, Memphis, has received a research grant of $1,500 from the United Cerebral Palsy for investigation by the EEG for evidences of birth injury which might later be revealed as palsy.

Dr. Minnie R. Vance has opened offices in Chattanooga, practice limited to pediatrics.

Dr. John H. Beveridge is associated with the firm of McClure, Lanier and Ivie, M.D.'s, Nashville, in the practice of Radiology.

Dr. Douglas O'Dell has opened offices in the Doctors Building, Nashville, for the practice of surgery.

Dr. Pierce M. Ross has opened an office in Nashville for the practice of internal medicine.

Dr. W. Roy Van Allen, Chattanooga, has been appointed medical director, Montview Sanitarium.

Dr. Elizabeth W. Kirby-Smith, Sewanee, attended the International Conference for Women held in Vichy, France in the fall, at which time she visited Italy and England.

Dr. H. M. Kelso, who for the past year has been associated with the Veterans Hospital, Mountain Home, has returned to the City Health Department of Knoxville as its principal medical officer.

TEXAS

International College of Surgeons will hold a regional Tri-State Assembly (Texas, Arkansas and Oklahoma) in Dallas, February 5-7. Dr. Curtice Rosser, Dallas, is chairman of the arrangement committee.

Dr. Stanley William Olson, dean of the University of Illinois College of Medicine, Chicago, has been elected dean of the Baylor University College of Medicine, Houston, succeeding Dr. Walter H. Moursund. Dr. Moursund, dean of the college since 1922, will remain on the faculty as dean emeritus and director of endowment.

Texas Pediatric Society has installed Dr. J. A. Bybee, Beaumont, president; and elected Dr. Robert L. Moore, Dallas, president-elect; Dr. M. C. Carlisle, Waco, secretary; Dr. James N. Walker, Fort Worth, secretary-elect; Dr. Jack M. Woodall, Big Spring, treasurer; Dr. Frank H. Lancaster, Houston, historian; and Dr. B. A. Knickerbocker, Dallas, councilor for District 2.

Drs. George R. Herrmann and Milton J. Hejtmancik, director and assistant director, respectively, of the Heart Station of the University of Texas Medical Branch, Galveston, have been awarded a grant of $2,000 by the Texas Heart Association for cardiovascular research work.

Dr. Patrick Comanell, formerly of Wells College of New York has been appointed associate professor of history and philosophy of medicine, University of Texas Medical Branch, Galveston.

Dr. George W. Turner, El Paso, has been appointed a member of the Texas State Board of Health to fill the unexpired term of the late Dr. James W. Long, Port Arthur.

Dr. and Mrs. Bolivar C. Andrews, Tyler, recently observed their fiftieth wedding anniversary.

Dr. John Matson Travis, Jacksonville, is the sixth winner of the annual award, which carries a gold medal and citation of service to humanity, given by the American Medical Association. He was chosen as "General Practitioner of the Year" by House of Delegates of the Association at its meeting held in Denver, Colorado, in December.

The new Memorial Library and Headquarters of the Texas Medical Association, recently dedicated, is located at 19th Street and Lamar Boulevard, Austin. It houses the executive, business, journal, medical services, public relations, state advisory committee, woman's auxiliary offices, and the library and auditorium-lounge. The auditorium-lounge has been named the Dr. and Mrs. Sam E. Thompson Room, in recognition of a $50,000 gift to the association for use in building and operating the Library. Dr. Thompson is a former president of the association.

Divisions of the University of Texas Postgraduate School of Medicine have been established in Tyler and Corpus Christi by the board of regents. Dr. J. Weldon Birdwell is director of the Tyler division and Dr. Kleberg Eckhardt is director of the Corpus Christi division.

Texas Academy of General Practice has installed Dr. Chester U. Callan, Rotan, president; and installed Dr. Cecil Forrest Jorns, Houston, president-elect; Dr. John W. Tunnell, Taft, vice-president; and Dr. Woodson W. Harris, Austin, secretary-treasurer. The 1953 meeting will be held in Dallas, September 15-16.

Dr. Frederick C. Elliott is the new executive director of the Texas Medical Center. He resigned as vice-president of the University of Texas and dean of its Dental Branch to accept this position. He is one of the original founders of the Texas Medical Center.

VIRGINIA

The Medical Society of Virginia, at its 105th annual meeting held in Richmond, installed Dr. James L. Hamner, Mannboro, president; and elected Dr. Vincent W. Archer, Charlottesville, president-elect; Drs. Kinloch Nelson, Richmond,

Continued on page 60

Classified Advertisements

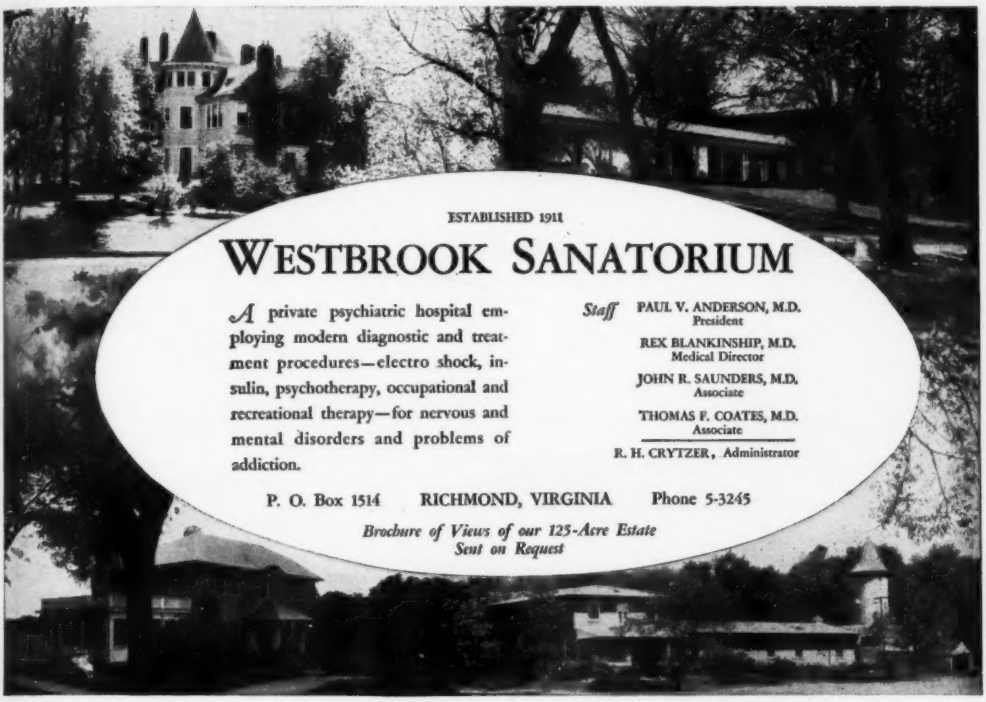
FOR SALE—In Florida city on East Coast, completely furnished office, equipment, including X-ray unit. Also a two-bedroom furnished apartment above office. In general practice, owner retiring. All for $25,000. Contact FP, c/o SMJ.

FOR SALE—New Picker Army X-Ray Unit, 30 M.A., complete with mobile base. $1175.00 F.O.B., Atlanta, Georgia. A. H. Smullian & Company, P. O. Box 4867, Atlanta, Georgia.

FOR SALE—General and surgical practice. Owner retiring. Practice largely Urology and Gynecology. Established 50 years. Practice located in same offices for twenty-eight years in southern city of 350,000; million population from which to draw. Will introduce. Contact SI, c/o SMJ.

WANTED—Physician for Alabama State Mental Institution. Salary $6,600.00 to $7,800.00. Must be licensed. Contact Steward, The Alabama State Hospitals, Tuscaloosa, Alabama.

ENT RESIDENTS WANTED—EENT HOSPITAL, averages 50,000 out-patient visits annually, adequate supervision, instruction, surgery under board men. Apply at once: EENT Hospital, 145 Elk Place, New Orleans 12, Louiisana.


ESTABLISHED 1911
WESTBROOK SANATORIUM
A private psychiatric hospital employing modern diagnostic and treatment procedures—electro shock, insulin, psychotherapy, occupational and recreational therapy—for nervous and mental disorders and problems of addiction.
Staff
PAUL V. ANDERSON, M.D.
President
REX BLANKINSHIP, M.D.
Medical Director
JOHN R. SAUNDERS, M.D.
Associate
THOMAS F. COATES, M.D.
Associate
R. H. CRYTZER, Administrator
P. O. Box 1514 RICHMOND, VIRGINIA Phone 5-3245
Brochure of Views of our 125-Acre Estate
Sent on Request

BRAWNER'S SANITARIUM

Established 1910

Smyrna, Georgia (Suburb of Atlanta)

FOR THE TREATMENT OF

Nervous and Mental Illnesses, Drug and Alcohol Addictions

JAS. N. BRAWNER, M.D., Medical Director

ALBERT F. BRAWNER, M.D., Dept. for Men JAS. N. BRAWNER, JR., M.D., Dept. for Women

Aminophyllin . . .

a "most effective single agent for prompt relief" of severe **bronchial asthma**

"useful as a peripheral vasodilator and myocardial stimulant" in

pulmonary edema
paroxysmal dyspnea
of congestive heart failure
Cheyne-Stokes respiration

H. E. DUBIN LABORATORIES, INC.
250 E. 43rd St. • New York 17, N.Y.

dubin
aminophyllin
(theophylline-ethylenediamine)

readily soluble for rapid therapeutic effect.

TABLETS • AMPULS
POWDER
SUPPOSITORIES

HAIMASED

finest of all

hypotensive

Thiocyanate

"the only known substances which will, with reasonable safety and over an extended period of time, effect substantial reduction in blood pressure." Annals of West. Med. & Surg., 1:173, 1947.

All the hypotensive efficacy of the Thiocyanate are available in HAIMASED in the first and finest Thiocyanate liquid made in the United States.

HAIMASED is stable, palatable, easy to take, sugar-free.

Each 100 cc. of HAIMASED represents 4.4 Grams (20 grains to the fluid ounce) of Sodium Thiocyanate.

Samples and literature upon request

The TILDEN Company

New Lebanon, N. Y. Chattanooga 2, Tenn.

Over 125 years of faithful service to the medical profession . . . by the oldest manufacturing pharmaceutical house in America. Founded 1824.

Continued from page 58

Snowden C. Hall, Danville, and W. C. Welburn, Arlington, vice-presidents; and Robert I. Howard, Richmond, executive secretary-treasurer and director of public relations. The 1953 annual meeting will be held in Roanoke, October 18-21.

Dr. Walter J. Lee, formerly associate professor of physical medicine and director of the Physical Therapy School, Medical College of Virginia, Richmond, is associated with Acuff Clinic, Knoxville, Tennessee.

Dr. Herbert W. Park, III has been appointed professor of physical medicine and rehabilitation and director of the Baruch Center of Physical Medicine, Medical College of Virginia, Richmond.

Dr. William T. Sanger, Richmond, was installed president of the National Society of Crippled Children and Adults at the annual meeting held in San Francisco in the fall.

Rural Health Conference will be held at Roanoke, Roanoke Hotel, February 27-28.

Medical College of Virginia, Richmond, has a new dormitory for nurses, Randolph-Minor Hall, erected at a cost of $593,411.36 for construction and $50,000 for equipment. The Wood Memorial Building, for use as the school of dentistry, is under construction and is expected to be completed in July.

Dr. Austin I. Dodson, Richmond, was made a member of the International Society of Urology at its Ninth Congress held in New York recently. The society has only 100 members in the United States.

Dr. Everett I. Evans, professor of surgery, Medical College of Virginia, and director of the Surgical Research Laboratories, Richmond, recently received a Distinguished Service Award from the University of Chicago, his Alma Mater.

The Petersburg General Hospital, Petersburg, which replaces the old hospital that has been operating for more than sixty years, was dedicated recently.

Dr. Darius Flinchum, formerly of Stonega, has opened offices in the Medical Arts Building, Columbus, Georgia, for the practice of orthopedic surgery.

Dr. Charles L. Outland, medical director of the Richmond Public Schools for the past twenty years, is the recipient of the William A. Howe Honor Award of the American School Health Association. The award named in honor of the founder of the association is given each year to perpetuate his philosophy of school health.

Dr. W. I. Prichard has been named superintendent of the Lynchburg State Colony, succeeding Dr. D. L. Harrell, resigned.

WEST VIRGINIA

West Virginia Tuberculosis and Health Association has elected Dr. Karl J. Myers, Philippi, president; Dr. H. H. Howell, Madison, vice-president; Lester Harer, Logan, secretary; and Robert C. Hawkins, Charleston, treasurer, reelected.

Dr. Walter E. Vest, Huntington, and Dr. Frank J. Holroyd, Princeton, were delegates from the West Virginia State Medical Association to the sixth annual clinical session of the American Medical Association held in Denver, December 2-5.

West Virginia Trudeau Society was organized in Charleston recently and elected Dr. William L. Cooke, Charleston, president; and Dr. H. S. Edwards, Beckley, secretary. This organization is a section of the American Trudeau Society which is the medical section of the National Tuberculosis Association.

West Virginia Academy of General Practice will hold its first two-day annual scientific assembly in Charleston, Daniel Boone Hotel, May 16-17.

Dr. I. O. Wilson, Corbin, Kentucky, has located at South Charleston for the practice of ophthalmology and otolaryngology.

Dr. Russell L. Heinlein, formerly of Huntington, has accepted a residency in psychiatry at the Veterans Administration Hospital, Roanoke.

Dr. Rudolph H. Hecksher, Jr., formerly of Parkersburg, has located at Ridley Park, Pennsylvania for the practice of general surgery.

Dr. F. Vivian Lilly, Beaver, has accepted a three-year residency in otolaryngology at the University Hospitals, State University of Iowa, Iowa City, Iowa.

Dr. George R. Cunningham, Tams, has located at New Castle, Pennsylvania, where he will continue in general practice.

Dr. Richard V. Corton, formerly of Elkins, has located at Waterloo, Iowa, for the practice of internal medicine.

Dr. John H. Burke, formerly of Princeton, and recently of Leaksville, North Carolina, has located at Gary for general practice.

STUART CIRCLE HOSPITAL

413-21 Stuart Circle

RICHMOND 20, VIRGINIA

Medicine:
ALEXANDER G. BROWN, JR., M.D.
MANFRED CALL, III, M.D.
M. MORRIS PINCKNEY, M.D.
ALEXANDER G. BROWN, III, M.D.
JOHN D. CALL, M.D.

Obstetrics and Gynecology:
WM. DURWOOD SUGGS, M.D.
SPOTSWOOD ROBINS, M.D.

Orthopedics:
BEVERLEY B. CLARY, M.D.

Pediatrics:
CHARLES P. MANGUM, M.D.
ALGIE S. HURT, M.D.

Opthalmology, Otalaryngology:
W. L. MASON, M.D.

Pathology:
REGENA BECK, M.D.

Bacteriology:
FORREST SPINDLE

Surgery:
A. STEPHENS GRAHAM, M.D.
CHARLES R. ROBINS, JR., M.D.
CARRINGTON WILLIAMS, M.D.
RICHARD A. MICHAUX, M.D.
CARRINGTON WILLIAMS, JR., M.D.

Urological Surgery:
FRANK POLE, M.D.

Oral Surgery:
GUY R. HARRISON, D.D.S.

Roentgenology and Radiology:
FRED M. HODGES, M.D.
L. O. SNEAD, M.D.
HUNTER B. FRISCHKORN, JR., M.D.
WILLIAM C. BARR, M.D.

Physiotherapy:
IRMA LIVESAY

Director:
CHARLES C. HOUGH

THE WALLACE SANITARIUM

Memphis, Tennessee

For the Diagnosis and Treatment of Nervous and Mental Diseases, Drug Addiction and Alcoholism.

HILL CREST SANITARIUM

FOR NERVOUS AND MENTAL DISEASES AND ADDICTIONS

Insulin and Electro-Shock Therapy used in Selected Cases. Gradual Reduction Method used in the Treatment of Addictions.
Established in 1925

Thoroughly modern in achitecture and construction. Eight departments—affording proper classification of patients. All outside rooms, attractively furnished. Several bathrooms and rooms with private bath on each floor. Also a spacious sun parlor in each department. Located on the crest of Higdon Hill, 1050 feet above sea level, overlooking the city, and surrounded by an expanse of beautiful woodland. Ample provision made for diversion and helpful occupation. Adequate night and day nursing service maintained.

James A. Becton, M.D., Physician-in-charge **James Keene Ward, M.D., Associate Physician**
P. O. Box 2896, Woodlawn Station, Birmingham 6, Ala. **Phones 9-1151 and 9-1152**

APPALACHIAN HALL

ASHEVILLE, NORTH CAROLINA

An institution for rest, convalescence, the diagnosis and treatment of nervous and mental disorders, alcohol and drug habituation.

Appalachian Hall is located in Asheville, North Carolina. Asheville justly claims an unexcelled all year round climate for health and comfort. All natural curative agents are used, such as physiotherapy, occupational therapy, shock therapy, outdoor sports, horseback riding, etc. Five beautiful golf courses are available to patients. Ample facilities for classification of patients. Rooms single or en suite with every comfort and convenience.

For rates and further information write

Appalachian Hall, Asheville, N. C.

Wm. Ray Griffin, M.D. M. A. Griffin, M.D.

CARROL TURNER SANATORIUM

MEMPHIS, TENNESSEE, ROUTE 10, BOX 288

For the Diagnosis and Treatment of Mental and Nervous Diseases

Located on the Raleigh-LeGrange Road, five miles east of the city limit —accessible to U. S. Highway 70 (Bristol Highway)

Situated on a sixty-six acre tract of wooded land and rolling fields, the environment is conducive to amelioration of the symptoms of emotionally disturbed patients

Modernly equipped with adequate facilities for physical and hydrotherapy, electroshock, and insulin theapy

Special emphasis is laid on recreational and occupational therapy

Adequate nursing personnel assures individual attention to each patient

The main building and hospital department of the Sanatorium is shown above

FAIRFIELD

Our convalescent home is located on the Sanatorium Grounds

The home is especially designed and fitted for the care of elderly people.

Dextri-Maltose

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U.S.A.

designed with singleness of purpose

Designed and manufactured specifically for infant formulas, Dextri-Maltose® has an unequaled background of successful clinical use.
Safety for your infant patients is assured by the dry form of this carbohydrate, meticulous laboratory control at all stages in its manufacture, and hermetically sealed, key-opening cans.
Dextri-Maltose is palatable but not sweet; does not create a "sweet tooth" in infants.
Easily measured without spilling or waste and almost instantly soluble, Dextri-Maltose is convenient for the mother.

Clinicians are reporting on

NEO-PENIL*

. . . the new, long-acting derivative of penicillin

. . . about its ability to concentrate in the lung:

". . . concentrations of this drug in the lungs after intramuscular injection are five to ten times higher than those of benzylpenicillin [penicillin G]."[1]

. . . about its ability to concentrate in sputum:

"Neo-Penil gave rise to significantly higher concentrations of penicillin in bronchial secretions than did procaine penicillin . . ."[2]

. . . about its effectiveness in bronchopulmonary disease:

"Our own evidence would indicate that it is a more effective form of penicillin in patients with chronic pulmonary emphysema and bronchopulmonary infection."[3]

"This compound appeared to have a unique value in respiratory infections due to gram-positive bacteria."[1]

Bibliography: 1. Barach, A.L., et al.: Bull. New York Acad. Med. 28:353 (June) 1952.
2. Flippin, H.F., et al.: Report distributed at the Chicago Session of the A.M.A. (June) 1952.
3. Segal, M.S., et al.: GP, in press.

'Neo-Penil' is available at retail pharmacies, in single-dose, silicone-treated vials of 500,000 units. *Full information about 'Neo-Penil' accompanies each vial,* or may be obtained by writing to:

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for penethamate hydriodide, S.K.F. (penicillin G diethylaminoethyl ester hydriodide) Patent Applied For

in the hands of the physician

Often the critical evaluation of the drug to be administered is as important to the patient's recovery as is the diagnosis of his condition. In each case correct procedures can be determined only by the physician.

CHLOROMYCETIN is eminent among drugs at the disposal of the medical profession. Clinical findings attest that, in the hands of the physician, this widely used, broad spectrum antibiotic has proved invaluable against a great variety of infectious disorders.

Chloromycetin®

notably effective
well tolerated
broad spectrum antibiotic

The many hundreds of clinical reports on CHLOROMYCETIN emphasize repeatedly its exceptional tolerance as demonstrated by the infrequent occurrence of even mild signs and symptoms of gastrointestinal distress and other side effects in patients receiving the drug.

Similarly, the broad clinical effectiveness of CHLOROMYCETIN has been established, and serious blood disorders following its use are rare. However, it is a potent therapeutic agent, and should not be used indiscriminately or for minor infections—and, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in a variety of forms, including:
CHLOROMYCETIN Kapseals,® 250 mg., bottles of 16 and 100.
CHLOROMYCETIN Capsules, 100 mg., bottles of 25 and 100.
CHLOROMYCETIN Capsules, 50 mg., bottles of 25 and 100.
CHLOROMYCETIN Ophthalmic Ointment, 1%, ¼-ounce collapsible tubes.
CHLOROMYCETIN Ophthalmic, 25 mg. dry powder for solution, individual vials with droppers.

MEDICAMENTA VERA · PD CO. ·

Parke, Davis + Company
DETROIT, MICHIGAN